

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.14 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1. Facility Name and Mailing Address: Oakland Park WWTP
9207 Kings Highway
King George, VA 22485

SIC Code : 4952 WWTP

Facility Location: 1015 French Court
King George, VA 22485
County: King George

Facility Contact Name: Jeffrey Hockaday
Telephone Number: (540) 775-2746
Facility E-mail Address: jhockaday@co.kinggeorge.state.va.us
2. Permit No.: VA0086789
Expiration Date of previous permit: June 12, 2010
Other VPDES Permits associated with this facility: VAN020056
Other Permits associated with this facility: None
E2/E3/E4 Status: Not Applicable
3. Owner Name: King George County Service Authority
Owner Contact/Title: Christopher F. Thomas
General Manager
Telephone Number: (54030) 775-2746
Owner E-mail Address: cthomas@co.kinggeorge.state.va.us
4. Application Complete Date: April 25, 2011
Permit Drafted By: Joan C. Crowther
Date Drafted: October 7, 2011
Revised Date: May 31, 2012
Draft Permit Reviewed By: Alison L. Thompson
Date Reviewed: October 27, 2011
WPM Review By: Bryant H. Thomas
Date Reviewed: December 21, 2011
Public Comment Period : Start Date: June 9, 2012
End Date: July 9, 2012
5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination dated August 14, 1996.
Receiving Stream Name : Muddy Creek, UT
Stream Code: 3-XDW
Drainage Area at Outfall: 0.55 sq.mi.
River Mile: 0.45
Stream Basin: Rappahannock
Subbasin: None
Section: 4
Stream Class: III
Special Standards: None
Waterbody ID: VAN-E21R
7Q10 Low Flow: 0.0 MGD
7Q10 High Flow: 0.0 MGD
1Q10 Low Flow: 0.0 MGD
1Q10 High Flow: 0.0 MGD
30Q10 Low Flow: 0.0 MGD
30Q10 High Flow: 0.0 MGD
Harmonic Mean Flow: 0.0 MGD
30Q5 Flow: 0.0 MGD
303(d) Listed (Receiving Stream) No
303(d) Listed (Downstream) Yes (*E.coli*, Benthic)
TMDL (Receiving Stream) No
TMDL (Downstream) Yes

Date TMDL Approved (Receiving Stream) No
Date TMDL Approved (Downstream) Yes (*E.coli* – 5/5/08)
No (Benthic- Due 2022)

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law	<input type="checkbox"/> EPA Guidelines
<input checked="" type="checkbox"/> Clean Water Act	<input checked="" type="checkbox"/> Water Quality Standards
<input checked="" type="checkbox"/> VPDES Permit Regulation	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> EPA NPDES Regulation	

7. Licensed Operator Requirements: Class II

8. Reliability Class: Class I

9. Permit Characterization:

<input type="checkbox"/> Private	<input type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input checked="" type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input checked="" type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		(Consent Special Order dated August 4, 2011)

10. **Wastewater Sources, Treatment Description, and Compliance History:**

In January 2012, the Oakland Park Wastewater Treatment's upgrade was completed. This upgrade was to address and enhance the treatment efficiency for conventional parameters. The upgrade also increased process performance/efficiency, compliance with the existing VPDES Permit, reliability, and automation and flexibility. A secondary benefit of the upgrade was to incorporate biological nutrient removal. The upgraded facility consists of one in-line grinder; surge and flow equalization tanks; anoxic tanks for biological nitrogen removal via denitrification; aeration tanks; clarifiers; two-cell sand filtration; and ultraviolet disinfection. One sludge holding tank exists to hold 30,000 gallons of waste sludge prior to hauling it to the County owned Dahlgren Wastewater Treatment Plant for final disposal.

On May 6, 2010, the facility received a Certificate to Construct (CTC). The May 6, 2010 CTC documentation stated that the TN and TP design annual concentration performance levels were 3.0 mg/L and 0.30 mg/L, respectively. During the permittee's first review of this draft permit (January 2012), staff was notified that the TN and TP annual concentrations were not designed for these state of the art annual concentrations and that BNR annual concentrations were more realistic. On March 8, 2012, a meeting between KGCSA and DEQ was held to discuss the permittee's comments and questions regarding the proposed draft permit and fact sheet. It was at this meeting that staff requested that KGCSA provide TN and TP design calculations and specify what would be appropriate TN and TP annual concentrations for the installed upgrade. KGCSA has documented by emails dated April 12 and 13, 2012, that the installed upgrade is capable of meeting a TN of 15 mg/L and a TP of 1.5 mg/L annual concentrations. The CTC (See Attachment 2) was modified on May 1, 2012, to address the Total Nitrogen (TN) and Total Phosphorus (TP) annual concentrations design specifications.

King George County Service Authority entered into a Consent Special Order dated August 4, 2011. The Order requires that the facility achieve compliance with the permit effluent limitations within 60 days of DEQ issuance of a CTO for any modification or upgrade to the treatment works or no later than January 15, 2012 whichever occurs first. (See Attachment 9). Due to issues dealing with the TN and TP actual treatment efficiency of the upgraded facility, the issuance of the CTO was delayed until May 1, 2012.

Chemical addition for both the existing plant and the upgraded plant is as follows:

- 1) Alum is added to the mixed liquor prior to entering the clarifiers to precipitate, settle and remove phosphorus.
- 2) Calcium Chloride is added to enhance the precipitation of phosphorus and to raise or adjust the total hardness levels to reduce or eliminate toxic effects of the metals.

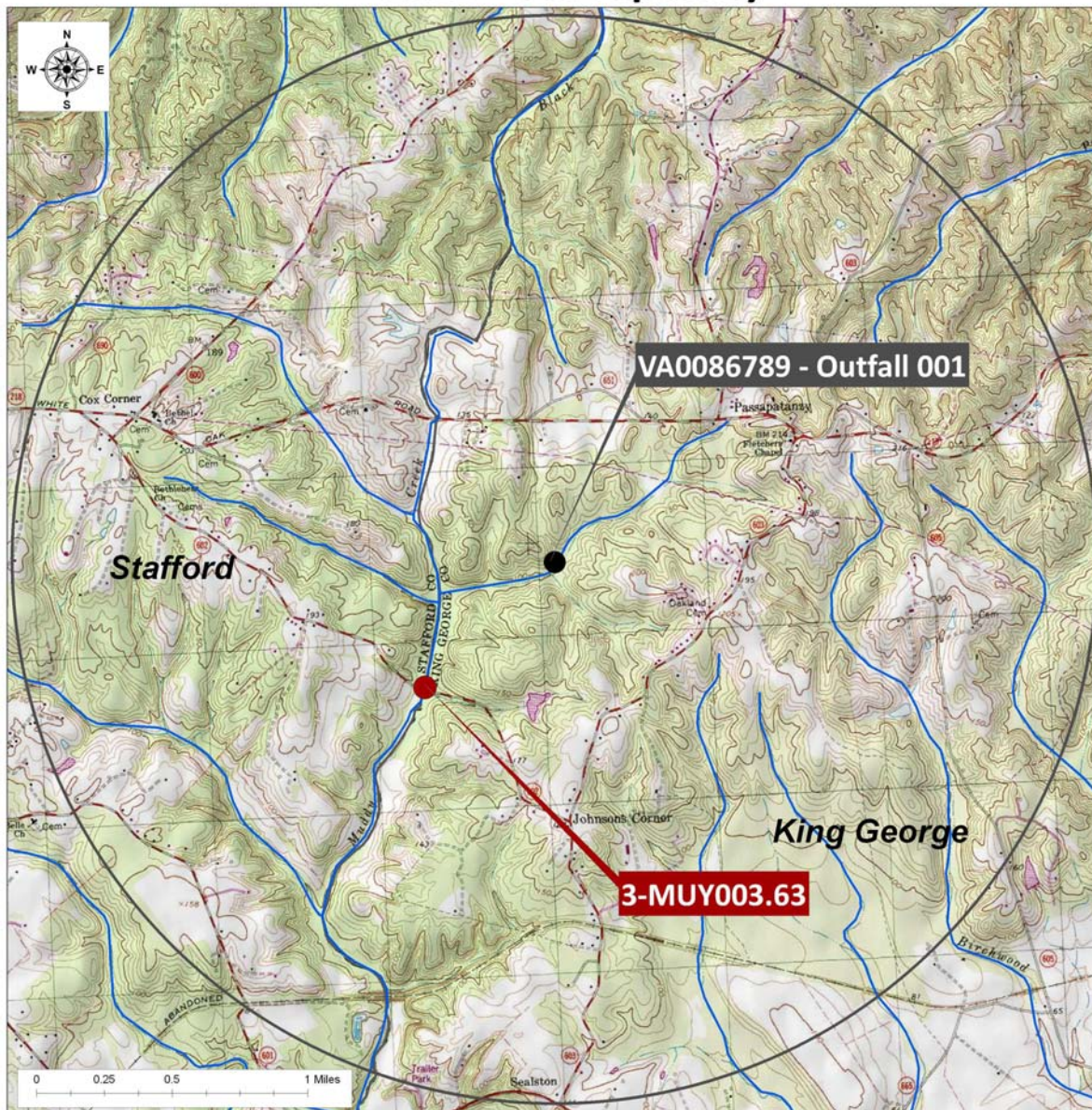
- 3) Polymer is added to enhance the performance of both the clarifiers and filters for reducing the total suspended solids concentrations in the effluent.

See Attachment 2 for a facility schematic/diagram and the description of the chemical usage at the facility.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow	Outfall Latitude and Longitude
001	Domestic and/or Commercial	See Item 10 above.	0.14 MGD	38° 17' 27" N 77° 19' 52" W

182D - Passapatanzy



11. Sludge Treatment and Disposal Methods:

The excess sludge is wasted to the aerobic digester/holding tank and hauled to the County's Dahlgren Wastewater Treatment Plant (VPDES Permit No. VA0026514) for further treatment/de-watering and disposal as needed. The de-watered sludge is disposed of at the King George Landfill operated by the Waste Management Corp.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge:

There are no VPDES Permitted facilities located within a 2-mile radius of this facility. There is one DEQ biomonitoring station (3-MUY003.63) located at Route 602 on Muddy Creek. There is a DEQ ambient stream monitoring station (3-MUY001.43) located at Route 3 Bridge on Muddy Creek. There are no drinking water intakes within a 5-mile radius of this facility.

13. Material Storage:

TABLE 2 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
"Sanuril" Hypochlorite Tablets for chlorination	3-5 (5 gallon buckets)	Stored in maintenance building
"Sanuril" Sodium Bisulfite Tablets for dechlorination	3-5 (5 gallon buckets)	Stored in maintenance building
Diesel Fuel for the Emergency Generator	500 gallons	Stored in approved tank
Calcium Chloride (dry)	60 (50 lb. bags)	Stored in maintenance building
Alum (dry)	60 (50 lb. bags)	Stored in maintenance building

14. Site Inspection:

Performed by DEQ-Compliance staff on March 8, 2012 (Attachment 3).

15. Receiving Stream Water Quality and Water Quality Standards:a) Ambient Water Quality Data

There is no monitoring station on the receiving stream, Muddy Creek, UT. The nearest downstream DEQ monitoring station with ambient data is Station 3-MUY003.63, located on Muddy Creek at the Route 602 Bridge crossing. This station is located approximately 0.83 rivermiles downstream from the Oakland Park WWTP's discharge outfall. The following is a monitoring summary, as taken from the 2010 Integrated Assessment:

The following monitoring stations are in proximity of the facility's outfall: DEQ ambient monitoring station 3-MUY001.43, at Route 3 and DEQ biological station 3-MUY003.63 at Route 602 (Chapel Green Road). Additionally, there is a citizen monitoring station 3-MUY-1-SOS.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. This impairment is nested within the downstream completed bacteria TMDL for the Tidal Freshwater Rappahannock River.

DEQ biological monitoring finds a benthic macroinvertebrate impairment, resulting in an impaired classification for the aquatic life use. Citizen monitoring data notes a high probability of adverse conditions for biota. The wildlife use is fully supporting. The fish consumption use was not assessed.

The following downstream impairments are listed for Muddy Creek and the Rappahannock River. Muddy Creek is a tributary to the tidal freshwater portion of the Rappahannock River.

Muddy Creek - Recreational Use Impairment: Sufficient excursions from the maximum *E. coli* bacteria criterion (3 of 7 samples - 42.8%) were recorded at DEQ's ambient water quality monitoring station (3-

MUY001.43) at the Route 3 Bridge crossing to assess this stream segment as not supporting the recreation use goal for the 2010 water quality assessment.

Muddy Creek - Aquatic Life Use Impairment: A total of two biological monitoring events in 2007 resulted in a SCI score that indicates an impaired macroinvertebrate community.

Rappahannock River - Fish Consumption Use Impairment: The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel, blue catfish, carp, channel catfish, croaker, gizzard shad, and anadromous (coastal) striped bass consumption to no more than two meals per month. The affected area extends from the I-95 Bridge above Fredericksburg downstream to the mouth of the river near Stingray Point, including its tributaries Hazel Run up to the I-95 Bridge crossing and Claiborne Run up to the Route 1 Bridge crossing. Excursions above the water quality criterion based tissue value (TV) of 20 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue were recorded in three species of fish (5 total samples) collected in 2006 at monitoring station 3-RPP080.19 (blue catfish, channel catfish, and gizzard shad). As a result, the waters were assessed as not supporting the fish consumption use.

Rappahannock River – Recreational Use Impairment: Sufficient excursions from the maximum *E. coli* bacteria criterion (11 of 59 samples - 18.6%) were recorded at DEQ's ambient water quality monitoring station (3-RPP098.81) at Buoy 112 to assess this stream segment as not supporting of the recreation use goal for the 2010 water quality assessment.

The DEQ NRO's planning statement dated July 13, 2011, is Attachment 4.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories [wastewater, urban storm water, onsite/septic agriculture, air deposition]. Fact Sheet Section 17.e provides additional information on specific nutrient limitations for this facility to implement the provisions of the Chesapeake Bay TMDL.

b) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260 (360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Muddy Creek, UT, is located within Section 4 of the Rappahannock River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

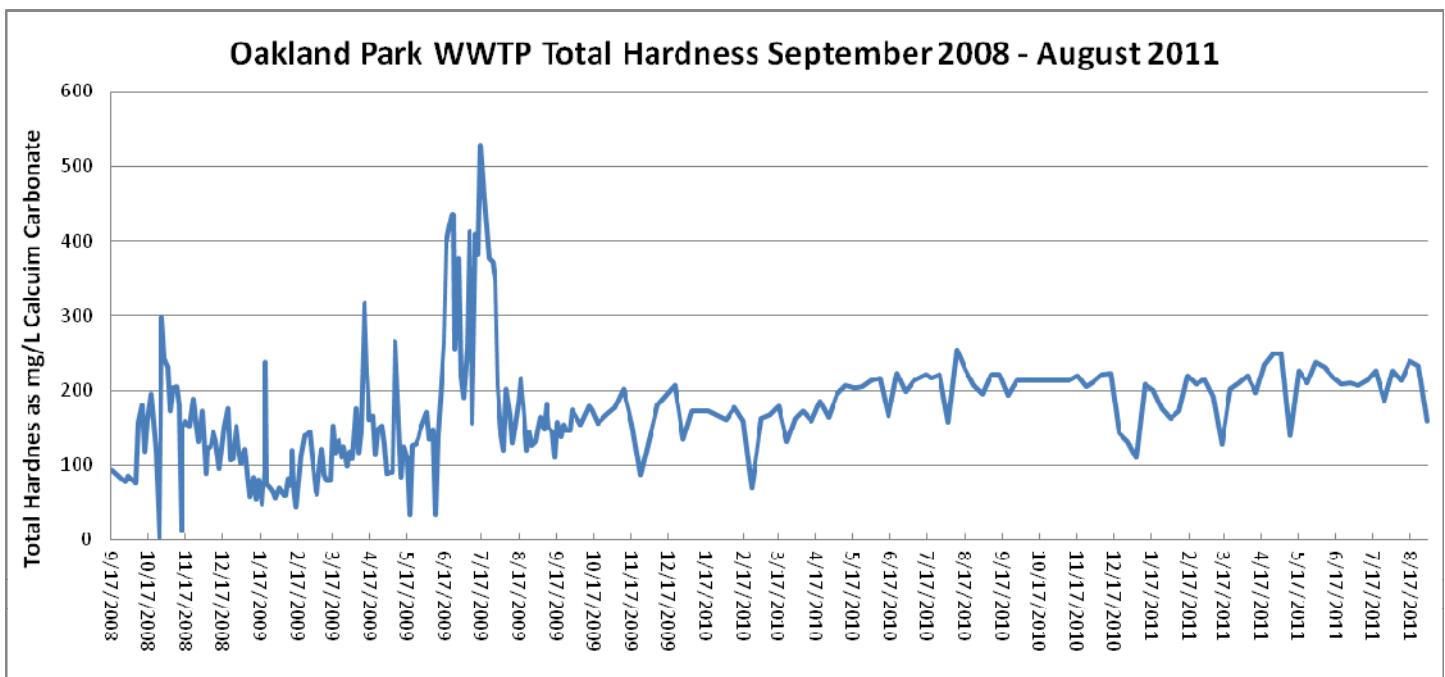
The Freshwater Water Quality Criteria/Wasteload Allocation Analysis dated October 25, 2011 (Attachment 5) details other water quality criteria applicable to the receiving stream.

Ammonia:

The 7Q10 and 1Q10 of the receiving stream are 0.0 MGD. In cases such as this, effluent pH and temperature data may be used to establish the ammonia water quality standard. Staff has evaluated the effluent data (January 2010 through August 2011) for pH (90th percentile = 7.69 S.U. and temperature (90th percentile = 26°C). These pH and temperature values will be used to derive the ammonia criteria. See Attachment 5 for the pH and temperature data.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/l calcium carbonate). The 7Q10 of the receiving stream is zero and no ambient data is available, the effluent data for hardness can be used to determine the metals criteria. Total Hardness data (September 2008 – August 2011) was provided by the permittee. The hardness-dependent metals criteria in Attachment 5 are based on a Total Hardness average effluent value of 170 mg/L. The data are provided as part of Attachment 5.

Bacteria Criteria:

The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli bacteria per 100 ml of water shall not exceed a monthly geometric mean of 126 n/100 mls for a minimum of four weekly samples taken during any calendar month.

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Muddy Creek, UT, is located within Section 4 of the Rappahannock Basin. This section has been designated with no special standards.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on December 12, 2011 to determine if there are any threatened or endangered species in the vicinity of the discharge. No threatened or endangered species were identified. See Attachment 6.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on an evaluation of the critical stream flows. The critical flows for the stream are zero and at times the stream flow is comprised of only effluent. It is staff's best professional judgment that such streams are Tier I. The stream segment has not been designated as swamp waters in the Virginia Water Quality Standards (Class IV); however, based on site inspections, it is staff's best professional judgment that the receiving stream near the facility discharge point and downstream has swamp-like characteristics. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from the permit application and monthly Discharge Monitoring Reports has been reviewed and determined to be suitable for evaluation. Effluent data June 2006 through October 2011 were reviewed, and the following exceedances of the established limitations were noted:

cBOD₅ – July 2009, March 2010, and June 2010.

TSS – November 2007- January 2008, April 2008, and April 2011.

TKN – June 2006-May 2007, November 2007, January 2008-February 2008, May 2008, and October 2008-March 2009.

Total Phosphorus – May 2008.

Dissolved Oxygen – May 2007.

Total Recoverable Copper – January 2008-September 2008, January 2009, August 2009 – November 2009, June 2010 – September 2010, and November 2010 – May 2011.

These effluent violations resulted in the facility entering into a Consent Special Order with DEQ. See Fact Sheet Section 26 for further discussion of the Order.

The following pollutants require a wasteload allocation analysis: Ammonia as N, and Total Recoverable Copper.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:	WLA	= Wasteload allocation
	C _o	= In-stream water quality criteria
	Q _e	= Design flow
	Q _s	= Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
	f	= Decimal fraction of critical flow
	C _s	= Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have all critical flows of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N/TKN:

Staff evaluated new pH and temperature effluent data (January 2010 through August 2011). Based on the analysis, the ammonia monthly average effluent limitation would be 2.0 mg/L and the weekly maximum effluent limitation would be 2.7 mg/L to protect the water quality of the receiving stream. See Attachment 7. However, since the permit contains a TKN monthly average effluent limitation of 3.0 mg/L, these ammonia effluent limitations are not necessary. The TKN effluent limitation is based on the receiving stream being classified as an intermittent stream.. DEQ Guidance Memorandum 00-2011 (VPDES Permit Manual; Section MN-2, Page 17) has established TKN limits for intermittent flows.

The facility will be given a year around TKN effluent limitation of 3.0 mg/L. A TKN limit of 3.0 mg/L assumes that the remaining nitrogen is in the form of refractory organic compounds that will not be easily oxidized and that ammonia is removed when this TKN limit is met. The weekly average concentration will be 4.5 mg/L based on a multiplier of 1.5 times the monthly average concentration.

These limits were applied to the Oakland Park WWTP in the previous permits and it is staff's best professional judgment that these limits are still appropriate and shall be carried forward with this permit reissuance.

2) Metals:

A Total Recoverable Copper limit of 14.4 µg/L was established in the previous permit. Using a Total Hardness value of 170 mg/L based on data collected from September 2008 through August 2011, new WLAs were established and limits were determined using all dissolved copper data since January 2008. A Total Recoverable Copper limit of 20 µg/L was established for this reissuance (Attachment 7).

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), carbonaceous biochemical oxygen demand-5 day (cBOD₅), total suspended solids (TSS), total kjeldahl nitrogen (TKN), and pH limitations are proposed.

cBOD₅, TSS, Dissolved Oxygen, and TKN limitations are based on best professional judgment and Guidance Memo 00-2011 (VPDES Permit Manual; Section MN-2, Page 17). This guidance is applicable to this portion of the Muddy Creek because the receiving stream is considered to be an intermittent stream and the waters cannot be modeled. This was verified during the stream inspection on January 30, 2002. As stated in this guidance, the cBOD₅ and TSS monthly average effluent limitation will be 10 mg/L with a weekly maximum of 15 mg/L. These cBOD₅ and TSS effluent limitations were applied to the Oakland Park Wastewater Treatment Plant in the previous VPDES Permit and it is staff's best professional judgment that these limits are still appropriate and will be carried forward with this permit reissuance.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9VAC25-31-220D requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. Only concentration limits are now found in the individual VPDES permit when the facility installs nutrient removal technology. The basis for the concentration limits is 9VAC25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* which requires new or expanding discharges with design flows of ≥ 0.04 MGD to treat for TN and TP to either BNR levels (TN = 8.0 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.30 mg/L).

This facility has also obtained coverage under 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility has coverage under this General Permit; the permit number is VAN0200056. Total Nitrogen Annual Loads and Total Phosphorus Annual Loads from this facility are found in 9VAC25-720 – *Water Quality Management Plan Regulation* which sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of ≥ 0.5 MGD above the fall line and ≥ 0.1 MGD below the fall line.

Monitoring for Nitrates + Nitrites, Total Nitrogen, and Total Phosphorus are included in this permit. The monitoring is needed to ensure protection of the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9VAC25-820. Annual average effluent limitations, as well as monthly and year to date calculations, for Total Nitrogen and Total Phosphorus are included in this individual permit. The annual averages are based on the technology installed and 9VAC25-40 and GM07-2008.

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following tables. Limits were established for Flow, cBOD₅, Total Suspended Solids, Total Kjeldahl Nitrogen, pH, Dissolved Oxygen, *E. coli*, Total Nitrogen Annual Concentration Average, Total Phosphorus Annual Concentration Average, and Total Recoverable Copper.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual and 9VAC25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed*.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD/CBOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

The backsliding proposed with this reissuance conforms to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, 9VAC25-31-220.L., and 40 § CFR 122.44. The Total Recoverable Copper limits at the 0.14 MGD flow are water quality based effluent limits. Also, the coefficient of variation used to derive the limits is better because there is new data. The revisions to the limits are allowed since the revisions comply with the water quality standards 402(o)(3) and they are consistent with antidegradation 303(d)(4)(B).

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19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.14 MGD.

Effective Dates: During the period beginning with the permit's effective and lasting until the expiration date, the permittee is authorized to discharge from Outfall Number 001. Such discharges shall be limited and monitored by the permittee as specified below.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
cBOD ₅	2, 5	10 mg/L 5.3 kg/day	15 mg/L 7.9 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS)	2, 5	10 mg/L 5.3 kg/day	15 mg/L 7.9 kg/day	NA	NA	3D/W	8H-C
Dissolved Oxygen	3	NA	NA	6.8 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (TKN)	2, 5	3.0 mg/L 1.6 kg/day	4.5 mg/L 2.4 kg/day	NA	NA	3D/W	8H-C
<i>E. coli</i> (Geometric Mean) ^a	3	126 n/100mls	NA	NA	NA	3D/W	Grab
Nitrate+Nitrite, as N	3, 6	NL mg/L	NA	NA	NA	2/M	8H-C
Total Nitrogen ^b	3, 6	NL mg/L	NA	NA	NA	2/M	Calculated
Total Nitrogen – Year to Date ^c	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year ^c	3, 6	15 mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	3, 6	NL mg/L	NA	NA	NA	2/M	8H-C
Total Phosphorus – Year to Date ^c	3, 6	NL mg/L	NA	NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year ^c	3, 6	1.5 mg/L	NA	NA	NA	1/YR	Calculated
Copper, Total Recoverable	3	20 µg/L	20 µg/L	NA	NA	1/M	Grab
Total Hardness (as CaCO ₃)	2	NL mg/L	NL mg/L	NA	NA	1/W	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Guidance Memo 00-2011 (VPDES Permit Manual; Section MN-2, Page 17)
6. 9VAC25-40 (Nutrient Regulation)

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

TIRE = Totalizing, indicating and recording equipment.

1/D = Once per day.

3D/W = Three days per week.

2/M = Twice a month, at least 7 days apart.

1/W = Once per week.

1/M = Once per month.

1/YR = Once per year.

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by $\geq 10\%$ or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Collected between 10:00 a.m. and 4:00 p.m.

b. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite.

c. See Section 20.a. for the Nutrient Calculations. The calendar year annual averages for Total Nitrogen and Total Phosphorus are effective January 1st of the year after issuance of the CTO for the installation of nutrient technology.

20. Other Permit Requirements:

- a) Permit Section Part I.B. of the permit contains quantification levels and compliance reporting instructions. 9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

- b) Permit Section Part I.C. details the requirements of a Pretreatment Program. The Oakland Park WWTP is a POTW with a current design capacity of 0.14 MGD. Since this facility's discharge is greater than 0.040 MGD, the facility is subject to following requirement in accordance with DEQ Guidance Memorandum No. 01.2026, Pretreatment Program Guidance Manual dated November 15, 2001, Section 5.2, Criteria Used by DEQ to Evaluate the Necessity of Program Development states,

Note: It is recommended that POTWs with design flows greater than or equal to 40,000 GPD conduct an IU survey and be evaluated for Pretreatment programs. The 40,000 flow figure has been a standard in Agency practice and is consistent with the increased operator oversight and testing requirements provided by VDH at this flow, as established in the Virginia Sewerage Regulations.

21. Other Special Conditions:

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.
- b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain an up-to-date O & M Manual for the treatment works. Any changes in the practices and procedures followed by the permittee shall be documented in the O & M Manual within 90 days of the effective date of the changes. The permittee shall operate the treatment works in accordance with the O & M Manual and shall make the O & M Manual available to Department personnel for review during facility inspections. Within 30 days of a request by DEQ, the current O & M Manual shall be submitted to DEQ Northern Regional Office for review. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation (9VAC25-31-200 C), and Board for Waterworks and Wastewater Works Operators Regulations (18VAC160-20 et seq.) requires licensure of operators. This facility requires a Class II operator.

- f) Reliability Class. The Sewage Collection and Treatment Regulations (9VAC25-790) require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of I.
- g) Water Quality Criteria Reopener. The VPDES Permit Regulation (9VAC25-31-220 D.) requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.
- h) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.
- i) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- j) E3/E4. 9VAC25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.
- k) Nutrient Reopener. 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

22. Changes to the Permit from the Previously Issued Permit:

- a) **Special Conditions:**
 - 1) The Nutrient Reporting Calculations Special Condition was deleted. These calculations are now part of Part I.B. of the VPDES permit.
 - 2) The Water Quality Criteria Special Condition was added.
 - 3) The Nutrient Reopener was added based on current agency guidance.
 - 4) The E3/E4 Special Condition was added since this permit contains Total Nitrogen and Total Phosphorus annual average concentration limitations.
 - 5) A special condition describing the how a geometric mean is to be calculated has been added to the permit.
 - 6) Updated O & M Manual special condition in accordance with DEQ guidance
- b) **Monitoring and Effluent Limitations:**
 - 1) *E. coli* monitoring and monthly geometric mean effluent limitation was added due to updates to the Water Quality Standards.
 - 2) Total Nitrogen and Total Phosphorus Annual Average concentration limitations were added. These limits become effective January 1st of the year following the CTO for the nutrient removal technology.
 - 3) Total Residual Chlorine limitations will no longer be required since the facility is using UV

disinfection.

- 4) Orthophosphate monitoring was removed from the individual permit in accordance with current agency guidance.
- 5) The Total Recoverable Copper limit was revised from 14.4 µg/L to 20 µg/L. The backsliding proposed with this reissuance conforms to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, 9VAC25-31-220.L., and 40 § CFR 122.44.
- 6) Total Hardness effluent monitoring was added to the permit because chemical addition during the treatment process may have an effect on the metal toxicity.

23. Variances/Alternate Limits or Conditions:

None.

24. Public Notice Information:

First Public Notice Date: June 9, 2012

Second Public Notice Date: June 16, 2012

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 8 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

25. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

Muddy Creek Recreational Use Impairment: Since this impairment is nested within the Tidal Freshwater Rappahannock River Bacteria TMDL, a separate TMDL will not be required. The Tidal Freshwater Rappahannock River Bacteria TMDL included modeling, source identification, and reductions that covered the entire watershed. The Rappahannock River Bacteria TMDL was approved by EPA on 05/05/2008. The Tidal Freshwater Rappahannock River Bacteria TMDL included a WLA of 2.44E+11 cfu/year of *E. coli* bacteria.

Muddy Creek Aquatic Life Use Impairment: The TMDL is due by 2022.

Rappahannock River Fish Consumption Use Impairment: The TMDL is scheduled to be completed by 2016.

TMDL Reopener: This special condition is to allow the permit to be reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

26. Additional Comments:

VPDES Permit Modifications: Since the VPDES Permit's 2006 Revoke and Reissuance, the permit has been modified twice. The July 2009 modification removed the 0.06 MGD flow tier, increased the frequency of monitoring for TKN, corrected the sample type for Total Phosphorus, $\text{NO}_2 + \text{NO}_3$, and orthophosphate, corrected the number of exceptions for Total Residual Chlorine monitoring, and corrected the licensing requirements of the operator. The December 2010 modification was initiated by a request by KGCSA to remove the final Total Nitrogen and Total Phosphorus Annual Average concentrations and related Schedule of Compliance that would have had the limits become effective January 1, 2011. This modification was done in accordance with the current agency guidance for nutrients.

Previous Board Action(s): The facility has had numerous exceedances for TKN, TSS, Dissolved Oxygen, cBOD_5 , Total Phosphorus, and Total Recoverable Copper values dating back to 2007 through 2010 that have resulted in the facility entering into a Consent Special Order with DEQ (Attachment 9). The Order requires that the facility achieve compliance with permit effluent limitations within 60 days of DEQ issuance of a CTO for any modification or upgrade to the treatment works or no later than January 15, 2012 whichever occurs first. While the Order was in effect, the facility had an interim limitation for Total Recoverable Copper of "No Limit".

Staff Comments: None.

Public Comment: During the public comment period, DEQ received comments from King George County Service Authority by letter dated June 26, 2012. Their comments dealt with 1) referencing the Consent Special Order dated August 4, 2011 in the fact sheet; 2) changing the receiving stream from intermittent to perennial; 3) requesting a Water Effects Ratio (WER) for Total Recoverable Copper during this permit cycle; 4) the geometric mean special condition language; and 5) the Significant digit special condition.

These comments were address by letter dated July 12, 2012 to the King George County Service Authority. Responses are summarized as follows (in the same numerical order as listed above): 1) Reference to the Consent Special Order will remain in the fact sheet; 2) King George County Service Authority can provide the appropriate documentation to DEQ should they feel like this issue should be pursued; 3) DEQ has no problem with King George County Service Authority pursuing a WER; 4) the geometric mean special condition does address King George County Service Authority's concern regarding addressing data less than the detection level; and 5) DEQ believes that the significant digit special condition is correct as it is written.

No other public comments were received during the public comment period.

EPA Checklist: The checklist can be found in Attachment 10.

VA0086789 Oakland Park Wastewater Treatment Plant
Fact Sheet Attachments

Attachment	Description
1	Flow Frequency Determination Memo dated August 14, 1996
2	Facility Schematic/Diagram, List of Chemicals used at facility, CTC, CTO
3	Site Inspection by DEQ Compliance Staff on March 8, 2012
4	DEQ Planning Statement dated July 13, 2011
5	Facility Technical Inspection dated April 25, 2008 Freshwater Water Quality Criteria/Wasteload Allocated Analysis dated October 24, 2011 (pH, Temperature, Total Hardness)
6	DGIF Threatened and Endangered Species Database Search dated December 12, 2011
7	Statistical Analysis of Total Recoverable Copper, and Ammonia
8	Public Notice
9	Consent Special Order dated August 4, 2011
10	EPA Checklist dated October 7, 2011

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Oakland Park WWTP - VA#0086789

TO: James Olson, NRO

FROM: Paul Herman, WQAP

DATE: August 14, 1996

COPIES: Ron Gregory, Charles Martin, File

The Oakland Park WWTP discharges to an unnamed tributary to the Muddy Creek near Passapatanzy, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

At the discharge point, the receiving stream is depicted as intermittent on the USGS Passapatanzy Quadrangle topographic map. The flow frequencies for intermittent streams are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and the harmonic mean. The drainage area above the discharge point is 0.51 mi². Flow frequencies have been provided below for the first perennial stream downstream of the discharge point. This point is on Muddy Creek just upstream of the unnamed intermittent discharge receiving stream and will be called the perennial point for the remainder of this memo.

The VDEQ operated a continuous record gage on the Cat Point Creek near Montross, VA (#01668500) since 1943. The gage is located at the Route 637 bridge in Richmond County, VA. The flow frequencies for the gage and the perennial point are presented below. The values at the perennial point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

Cat Point Creek near Montross, VA (#01668500):

Drainage Area = 45.6 mi² ✓

1Q10 = 0.02 cfs - 0.0	High Flow 1Q10 = 5.5 cfs - 6.8
7Q10 = 0.10 cfs - 0.5	High Flow 7Q10 = 7.6 cfs - 4.9
30Q5 = 1.5 cfs - 1.3	HM = 0.0 cfs
30Q10 = 0.58	High Flow 3Q10 = 14

The harmonic mean is zero due to the presence of zero flow

High Flow months - DEC - MAY

values in the data set.

Muddy Creek at perennial point:

Drainage Area = 1.2 mi ²		
1Q10 = 0.001 cfs	High Flow 1Q10 = 0.14 cfs	
7Q10 = 0.003 cfs	High Flow 7Q10 = 0.20 cfs	
30Q5 = 0.039 cfs	HM = 0.0 cfs	

The high flow months are December through May. If you have any questions concerning this analysis, please let me know.

DESCRIPTIONS OF CHEMICALS USES AT THE OAKLAND PARK WASTEWATER TREATMENT PLANT

The following are descriptions of the chemical usage and points of application at the Oakland Park WWTP

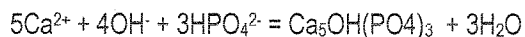
Alum (Aluminum sulfate = $\text{Al}_2(\text{SO}_4)_3 \cdot 14\text{H}_2\text{O}$)

The Oakland Park WWTP has a phosphorus limit of 0.3 mg/L. This limit is derived from the wastewater load allocations (WLA) under the Chesapeake Bay Nutrient Regulations. In order to meet this limit, alum solution is added to the wastewater. The alum solution is added to the mixed liquor just prior to entering the clarifiers to precipitate, settle, and remove phosphorus. The alum reacts with ortho-phosphorus to form a chemical sludge, aluminum phosphorus (AlPO_4). The alum sludge is removed when it settles in the clarifiers along with the biological sludge. The sludge is temporarily stored in the sludge holding tanks before being hauled to the Dahlgren Wastewater Treatment Plant for further sludge digestion and final disposal. The solution is prepared by adding two (2) 50 lb bags to every 200 Gallons of water (1 ml = 60 mg Alum). In addition to chemically enhancing phosphorus removal to meet its WLA, the Oakland Park WWTP "bubbles" its phosphorus WLA with the Hopyard Farms WWTP.

Facility store about 60 – 50 lb bags (dry) at a time

Calcium Chloride (CaCl_2)

Calcium Chloride is added to enhance the precipitation of phosphorus. As an additional benefit, the total hardness is increased to provide a reduction in metals thru precipitation and reduce the toxic effects of said metals, such as copper and zinc, on the receiving stream. In fact, any permitted metals limit is proportional to the effluent hardness. Calcium chloride solution is added continuously to the Equalization tank to maintain a target level of effluent hardness. The existing average effluent total hardness for the Oakland Park Corner WWTP is 176 mg/L as CaCO_3 . Upon completion of the plant upgrades, an average effluent total hardness of at least 175 mg/L as CaCO_3 . In the presence of hydroxyl ions (OH^-), calcium and orthophosphate reacts to form hydroxyapatite precipitate as follows (source: Wastewater Treatment Plant Design, Vesilind, WEF & IWA, 2003):



Facility store about 60 – 50 lb bags (dry) at a time



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

Douglas W. Domenech
Secretary of Natural Resources

13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

David K. Paylor
Director

Thomas A. Faha
Regional Director

May 1, 2012

King George County
Oakland Park WWTP Improvements
PTL#24870, VPDES Permit VA0086789

Mr. Christopher Thomas
King George County Service Authority
10459 Courthouse Drive
King George, VA 22485

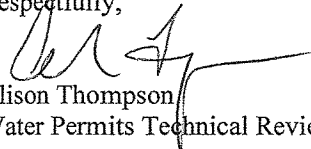
Re: REVISED Certificate to Construct

Dear Mr. Thomas:

In accordance with the Code of Virginia, Title 62.1, Section 62.1-44.19, attached please find the Revised Certificate to Construct (CTC) for this project. This Revised CTC supersedes the CTC dated May 6, 2010 for the Oakland Park WWTP Improvements. This Revised CTC is being issued based on the Revised Application for Certificate to Construct dated March 16, 2012, and received by this office on March 21, 2012. The Revised CTC was submitted at the request of DEQ Permitting staff following the March 8, 2012 meeting between King George County staff and DEQ Permitting and Enforcement staff.

If you have any questions about this letter, please contact me at (703)-583-3834 or alison.thompson@deq.virginia.gov.

Respectfully,


Alison Thompson
Water Permits Technical Reviewer


cc: VPDES Permit File VA0086789
VDH District Office, attn: Environmental Health Manager
King George County Building Official
Ignatius Mutoti, Retaw Engineering, 2903 Sagecreek Circle, Midlothian, VA23112

Attachment: CTC

**Virginia Department of Environmental Quality
APPLICATION for CERTIFICATE TO CONSTRUCT (CTC)**

For Municipal Sewage Collection, Treatment, and/or Reclamation Systems

See Instructions. Do not submit plans and specifications. Submit 1 copy of this form with all attachments. Form will expand as you enter information.

Project Title: (as it appears on plans) Oakland Park Wastewater Treatment Plant Improvements	
P.E. Seal Date on Cover: 05-20-2011	
Specifications Title and Date: Oakland Park Wastewater Treatment Plant Improvements: November 15, 2010	
Location of Project: 1015 French Quarter, Oakland Park Subdivision	County/City: King George
Receiving Wastewater Collection System(s): N/A	
Receiving Sewage Treatment Plant(s)/Reclamation System: N/A	
PROJECT OWNER: King George County Service Authority	PROJECT ENGINEER
Owner Contact Name: Christopher F. Thomas PE	Name: Ignatius Mutoti, PhD, PE
Title: General Manager	Company Name: Retaw Engineering, LLC
Address: 9207 Kings Highway, King George, VA 22485	Address: 2903 Sagecreek Circle, Midlothian, VA 23112
Phone: (540) 775-8563	Phone: (804) 744-1792
Email: cthomas@co.kinggeorge.state.va.us	Email: ignatius.mutoti@retaweng.com
Owner Signature and date:  3-16-2012	

For Sewage Treatment Works and Sewage Collection Systems:

Attach Project Description

Attach Letter(s) of Acceptance from Receiving Facility/Utility for sewage collection system projects

Attach Reliability Class: (1) For Pump Stations attach Reliability Class Worksheet. (2) For Sewage Treatment Plants note the Reliability Class rating from the VPDES or VPA permit and method of meeting reliability classification requirements.

For a sewage treatment plant project, provide the VPDES or VPA permit number: VA0086789

Design Sewage Flow (Sewage Plant): (a) average daily flow (MGD): 0.14 (b) peak daily flow (MGD): 0.35

Design Sewage Flow (Pump Station): (a) average daily flow (MGD): N/A (b) peak hour flow (MGD): N/A

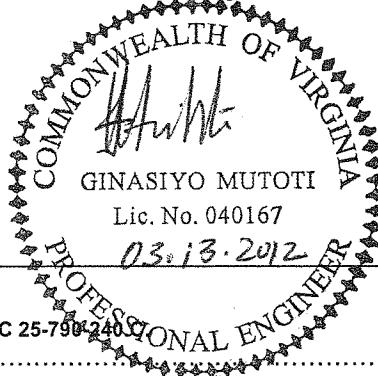
Please check the appropriate components of your project:

Gravity and/or Vacuum Sewer	<input type="checkbox"/>	New Sewage Treatment Plant.....	<input type="checkbox"/>
Pump Station(s).....	<input type="checkbox"/>	Modification of Existing Sewage Treatment Plant	<input checked="" type="checkbox"/>
Force Main(s).....	<input type="checkbox"/>	Expansion of Existing Sewage Treatment Plant	<input type="checkbox"/>

For Reclamation or Satellite Reclamation System, Attach Page 2: Page 2 Attached? Yes ☐ No ☒

The following statement must be signed and sealed by the Virginia licensed design engineer:

"As discussed in 9 VAC 25-790-240.C., the referenced design documents are in substantial compliance with Part III - Manual of Practice For Sewerage Systems and Treatment Works, of the Sewage Collection and Treatment Regulations (9 VAC 25-790-310 et seq.)"

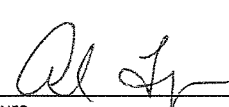


Licensed Design Engineer's Signature and original seal (signed and dated)

☒ Design exceptions and justifications are attached in accordance with 9 VAC 25-790-240.C.

For DEQ use only:

In accordance with the Code of Virginia 1950, as amended, Title 62.1, Section 62.1-44.19, this form, signed by the appropriate DEQ representative, constitutes your Certificate to Construct. This Certificate is valid for a period of five years from the date of issuance. Other permits and authorizations may be necessary. Please contact your Regional DEQ Office if you have any questions.

<u>Alison Thompson</u>	<u></u>	<u>5/1/12</u>	<u>24870</u>
Name	Signature	Date	CTC PTL Number
Department of Environmental Quality Authorized Representative			

Note: Once the project is complete, an application for a Certificate to Operate must be submitted to the appropriate DEQ Regional office.



COMMONWEALTH of VIRGINIA

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David K. Paylor
Director

Thomas A. Faha
Regional Director

May 1, 2012

King George County
Oakland Park WWTP Improvements
PTL#25519, VPDES Permit VA0086789

Mr. Christopher Thomas
King George County Service Authority
10459 Courthouse Drive
King George, VA 22485

Dear Mr. Thomas:

In accordance with 9VAC25-790-190 of the Commonwealth of Virginia's *Sewage Collection and Treatment Regulations*, this letter transmits the Certificate to Operate (CTO) for **Oakland Park WWTP Improvements** located in King George County. The CTO is being issued based on the Application for Certificate to Operate dated March 16, 2012, and received by this office on March 21, 2012 with supplemental information received April 12 and 13, 2012.

If you have any questions about this letter or the approval process, please contact me at (703)-583-3834 or alison.thompson@deq.virginia.gov.

Respectfully,

A handwritten signature in black ink, appearing to read "Alison Thompson".

Alison Thompson
Water Permits Technical Reviewer

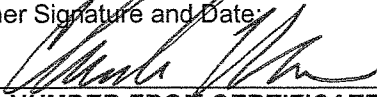
cc: VPDES Permit File VA0086789
VDH District Office, attn: Environmental Health Manager
King George County Local Building Official
Ignatius Mutoti, Retaw Engineering, 2903 Sagedcreek Circle, Midlothian, VA 23112

Attachment: CTO

**Department of Environmental Quality
APPLICATION for CERTIFICATE TO OPERATE**

**Under the Sewage Collection and Treatment Regulations 9 VAC 25-790
and/or the Water Reclamation and Reuse Regulation 9 VAC 25-740**

See instructions. Submit 1 copy of this form and any attachments. Form will expand as you enter information.

Project Title: (as it appears on plans) Oakland Park Wastewater Treatment Plant Improvements	
P.E. Seal Date on Cover: 05-20-2011	
Specifications Title and Date: Oakland Park Wastewater Treatment Plant Improvements: November 15, 2010	
Location of Project: 1015 French Quarter, Oakland Park Subdivision	County/City: King George
Receiving Wastewater Collection System(s): N/A	
Receiving Sewage Treatment Plant(s): N/A	
PROJECT OWNER: King George County Service Authority	RESPONSIBLE ENGINEER
Owner Contact Name: Christopher F. Thomas PE	Name: Ignatius Mutoti, PhD, PE
Title: General Manager	Company Name: Retaw Engineering LLC
Address: 9207 Kings Highway, King George, VA 22485	Address: 2903 Sagecreek Circle, Midlothian, VA 23112
Phone: (540) 775-8563	Phone: (804) 744-1782
Email: cthomas@co.kinggeorge.state.va.us	Email: ignatius.mutoti@retaweng.com
Owner Signature and Date:  3-16-2012	

PTL NUMBER FROM CERTIFICATE TO CONSTRUCT: 24870

Attach Copy of the original Certificate to Construct if issued prior to November 9, 2008. If applicable, provide verification of compliance with any conditions in the Certificate to Construct.

Design Flow: (a) average daily flow (MGD): 0.14 (b) peak flow (MGD): 0.35

For sewage treatment plant, water reclamation or satellite reclamation projects, provide the VPDES/VPA Permit Number: VA0086789

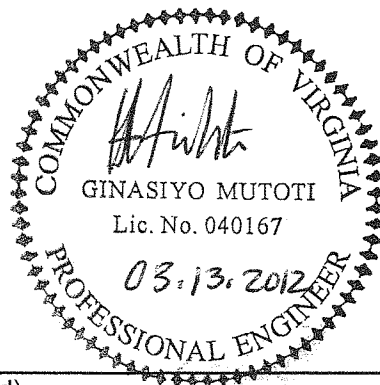
Is a new Discharge Monitoring Report (DMR) or other monthly monitoring report required? Yes ☒ No ☐

For Pump Stations, Sewage Treatment Plants, and Reclamation Systems, check Reliability Class: I ☒ II ☐ III ☐
NA ☐

Two options are provided for the Statement of Completion, depending on whether the project is being authorized under the Sewage Collection and Treatment Regulations, the Water Reclamation and Reuse Regulations, or BOTH. Please check the appropriate box and then provide signature and seal below as indicated.

☒ *The following statement of completion for issuance of a Certificate to Operate under the Sewage Collection and Treatment Regulations must be signed and sealed by the responsible engineer. (DEQ will not conduct a confirming inspection.)*

"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-790-180.B, and inspections have been performed to make this statement in accordance with Section 9 VAC 25-790-180.C.1 of the Sewage Collection and Treatment Regulations."



Licensed Engineer's Signature and original seal (signed and dated)

- ☐ The following statement of completion for issuance of a Certificate to Operate under the Water Reclamation and Reuse Regulation must be signed and sealed by the responsible engineer. (DEQ will not conduct a confirming inspection.)

"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-740-120-B.2.b. and inspections have been performed to make this statement in accordance with Section 9 VAC 25-40-120.B.3.a. of the Water Reclamation and Reuse Regulations."

Licensed Engineer's Signature and original seal (signed and dated)

.....
For DEQ use only:

In accordance with *Code of Virginia* 1950, as amended, Title 62.1, Section 62.1-44.19, this form, signed by the appropriate DEQ representative, serves as the **Certificate to Operate** for the referenced project.

<u>Alison Thompson</u>	<u></u>	<u>5/1/12</u>	<u>25519</u>
Name	Signature	Date	CTO PTL Number

Department of Environmental Quality Authorized Representative

An Operation and Maintenance Manual must be submitted to the DEQ Regional Office in accordance with 9 VAC 25-790 for sewage treatment plants, 9 VAC 25-740 for water reclamation systems and satellite reclamation systems and VPDES or VPA permit requirements.

For pump stations, an Operation and Maintenance Manual must be maintained for the facility in accordance with 9 VAC 25-790, but is NOT to be submitted to DEQ. The pump station must be operated and maintained in accordance with that manual.



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court, Woodbridge, Virginia 22193

(703) 583-3800 Fax (703) 583-3821

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

March 23, 2012

Mr. Chris Thomas
King George County Service Authority (KGCSA)
9207 Kings Highway
King George, VA 22485

Re: Oakland Park WWTP, Permit # VA0086789

Dear Mr. Thomas;

Attached is a copy of the Inspection Report generated from the Facility Recon Inspection conducted at Oakland Park – Wastewater Treatment Plant (WWTP) on March 1, 2012. This letter is not intended as a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 et seq. (APA).

Additional inspections may be conducted to confirm that the facility is in compliance with permit requirements.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Regional Office at (703) 583-3882 or by e-mail at Sharon.Allen@deq.virginia.gov.

Sincerely,

A handwritten signature in cursive script that reads "Sharon Allen".

Sharon Allen
Environmental Specialist II


cc: Permits / DMR File

Electronic copy sent:

Compliance Manager, Compliance Auditor, Enforcement – DEQ
Jeff Hockaday- KGCSA

Virginia Department of Environmental Quality

RECON INSPECTION REPORT

FACILITY NAME: Oakland Park WWTP		INSPECTION DATE: March 1, 2012	
		INSPECTOR: S. Allen	
PERMIT No.: VA0086789		REPORT DATE: March 23, 2012	
TYPE OF FACILITY: <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Major <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Federal <input type="checkbox"/> Small Minor <input type="checkbox"/> HP <input type="checkbox"/> LP		TIME OF INSPECTION:	
		Arrival 10:45	Departure 11:40
		TOTAL TIME SPENT (including prep & travel)	
		7 hours	
PHOTOGRAPHS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		UNANNOUNCED INSPECTION? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
REVIEWED BY / Date:			
 3/21/12			
PRESENT DURING INSPECTION: Joan Crowther- DEQ Chris Thomas, Jeff Hockaday- KGCSA Ignatius Mutoti – Retaw Engineering Tony Knight- East Coast Utility Contractors, Ltd.			

INSPECTION OVERVIEW AND CONDITION OF TREATMENT UNITS

- This site visit was conducted to see the recently completed upgrades to the facility.
- Ms. Crowther and I drove to Oakland Park STP from Purkins Corner STP. We toured the plant with KGCSA and contracted staff. Photos by S. Allen
- Plant alarms have been connected to SCADA and to the auto dialer to notify KGCSA staff of problems after-hours or when operators are off-site.
- Incoming flow passes through a grinder then into the EQ tank. The trash basket at the head of the EQ tank has been replaced (photo 1).
- Flow from the EQ tanks is split between two treatment plants with the same components. Both plants were on-line.
- The old sludge holding tanks have been converted into anoxic zones in each plant. An in-line DO sensor (photo 2) and OPR sensor have been installed in each anoxic zone.
- The reading on the DO LCD display in plant B was 5.0 mg/L in the anoxic zone. Mr. Thomas said they are still in process of fine tuning – high DO seems to come with the RAS (returned to the anoxic zone). He stated that the plant is denitrifying, but can do better.
- New mixers have been installed in the new anoxic zones. The coarse bubble diffusers in the aeration basins have been changed to fine bubble diffusers; the old diffusers are installed in the new sludge holding tanks.
- New high speed turbo blowers installed to provide air to the aeration basins. One of the two blowers showed an active alarm (photo 3). Mr. Thomas stated that this alarm was probably for the air filter.

VA DEQ Recon Inspection Report

Permit #

VA0086789

INSPECTION OVERVIEW AND CONDITION OF TREATMENT UNITS

- Two new independent blowers have been added to plant A, which appears to have resolved the past issue with blowers tripping out, which has been cited as the cause of effluent violations in past.
- New sludge holding tanks with a capacity of 30,000 gallons have been installed (photo 6). Sludge is hauled to Dahlgren District WWTP for processing.
- Stairs have been installed to provide better access to the new UV banks and the outfall (photo 7). These stairs came from Dahlgren WWTP. Also plan to put in a concrete walkway to the UV system and to the effluent manhole that contains the Parshall flume used for flow measurement.
- The chlorination and dechlorination facilities have been replaced with a Trojan UV disinfection system. Unit #1 was in operation. The intensity sensor read 3.7 mW/cm², and 358 hours. Unit #2 kicks in if intensity < 1.5 mW/cm².
- Mr. Thomas stated that Infilco has merged with another company, and they have had trouble ever since with contacting their sales representative to order replacement parts. As a result, they order quantities when they do make contact and the three plants that have Infilco UV systems share spare parts.
- We checked the outfall area (photo 8). Outfall 001 was submerged and the receiving stream is much wider than in past due to beaver dams downstream. Various people have tried to remove the beavers, but more come in. The dam itself is not on KGSA property.

Permit #	VA0086789
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EFFLUENT FIELD DATA: NA

Flow	<input type="text"/> MGD	Dissolved Oxygen	<input type="text"/> mg/L	TRC (Contact Tank)	<input type="text"/> mg/L
pH	<input type="text"/> S.U.	Temperature	<input type="text"/> °C	TRC (Final Effluent)	<input type="text"/> mg/L
Was a Sampling Inspection conducted? <input type="checkbox"/> Yes (see Sampling Inspection Report) <input checked="" type="checkbox"/> No					

CONDITION OF OUTFALL AND EFFLUENT CHARACTERISTICS:

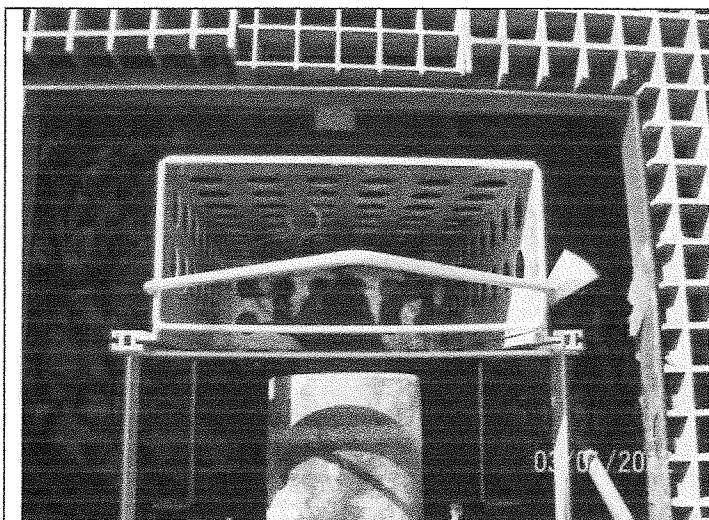
1. Type of outfall:	<input checked="" type="checkbox"/> Shore based	<input type="checkbox"/> Submerged	Diffuser?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
2. Are the outfall and supporting structures in good condition?				<input type="checkbox"/> Yes	<input type="checkbox"/> No
3. Final Effluent (evidence of following problems):	<input type="checkbox"/> Sludge bar		<input type="checkbox"/> Grease		
	<input type="checkbox"/> Turbid effluent	<input type="checkbox"/> Visible foam	<input type="checkbox"/> Unusual color	<input type="checkbox"/> Oil sheen	
4. Is there a visible effluent plume in the receiving stream?				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5. Receiving stream:	<input checked="" type="checkbox"/> No observed problems		<input type="checkbox"/> Indication of problems (explain below)		
<u>Comments:</u>					
2. Could not see the outfall structure.					

REQUEST for CORRECTIVE ACTION:

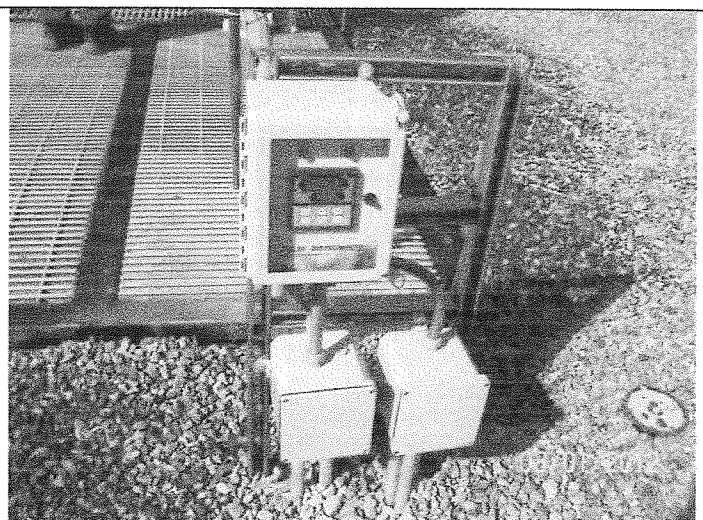
1. None at this time.

NOTES and COMMENTS:

A revised O&M manual for this facility will be required to be submitted to DEQ's NRO once the CTO is issued.
--



1) New trash basket at EQ tank.



2) New in-line DO meter LCD display.



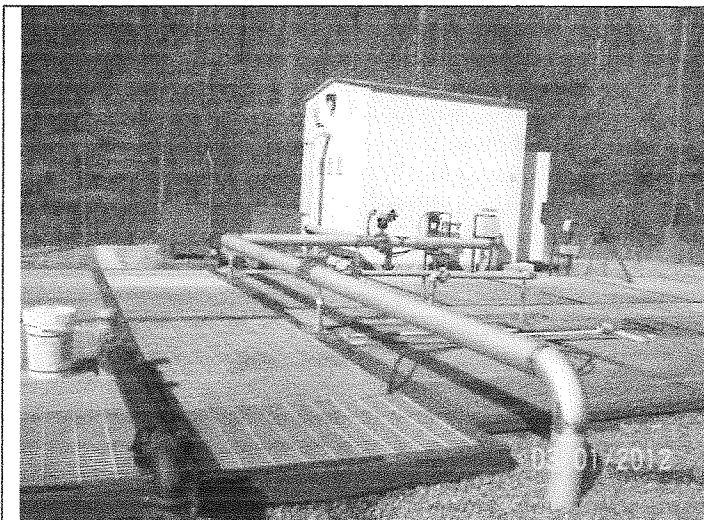
3) New turbo blower showing alarm



4) Turbo blower and control panel.

Facility name: Oakland Park WWTP
Site Inspection Date: March 1, 2012

VPDES Permit No. VA0086789
Photos & Layout by: S. Allen
Page 1 of 2



5) New blower building for turbo blowers.



6) New sludge holding tanks.



7) Newly installed stairs to UV and Outfall 001.



8) Outfall 001 (currently submerged).

Facility name: Oakland Park WWTP
Site Inspection Date: March 1, 2012

VPDES Permit No. VA0086789
Photos & Layout by: S. Allen
Page 2 of 2

To: Joan C. Crowther
From: Katie Conaway

Date: July 13, 2011
Subject: Planning Statement for Oakland Park Wastewater Treatment Plant
Permit Number: VA0086789

Discharge Type: Minor Municipal
Discharge Flow: 0.14 MGD

Receiving Stream: Muddy Creek, UT
Latitude / Longitude: 38° 17' 27" / 77° 19' 52"
Streamcode: 3-XDW
Waterbody: VAN-E21R
Water Quality Standards: Class III, Section 4.
Rivermile: 0.45
Drainage Area: 0.55 mi²

1. Is there monitoring data for the receiving stream?

No.

- If yes, please attach latest summary.
- If no, where is the nearest downstream monitoring station.

The nearest downstream DEQ monitoring station with ambient data is Station 3-MUY003.63, located on Muddy Creek at the Route 602 bridge crossing. This station is located approximately 0.83 rivermiles downstream from the Outfall of VA0086789. The following is a monitoring summary for Station 3-MUY003.63, as taken from the 2010 Integrated Assessment:

Class III, Section 4.

DEQ ambient monitoring station 3-MUY001.43, at Route 3 and DEQ biological station 3-MUY003.63 at Route 602 (Chapel Green Road). Citizen monitoring station 3-MUY-1-SOS.

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. This impairment is nested within the downstream completed bacteria TMDL for the Tidal Freshwater Rappahannock River.

DEQ biological monitoring finds a benthic macroinvertebrate impairment, resulting in an impaired classification for the aquatic life use. Citizen monitoring data notes a high probability of adverse conditions for biota.

The wildlife use is fully supporting. The fish consumption use was not assessed.

2. Is the receiving stream on the current 303(d) list?

No.

- If yes, what is the impairment?

N/A

- Has the TMDL been prepared?

N/A

- If yes, what is the WLA for the discharge?

N/A

- If no, what is the schedule for the TMDL?

N/A

3. If the answer to (2) above is no, is there a downstream 303(d) listed impairment?

Yes. There are several downstream impairments listed for Muddy Creek and the Rappahannock River. Muddy Creek is a tributary to the tidal freshwater portion of the Rappahannock River.

- If yes, what is the impairment?

Muddy Creek - Recreational Use Impairment: Sufficient excursions from the maximum *E. coli* bacteria criterion (3 of 7 samples - 42.8%) were recorded at DEQ's ambient water quality monitoring station (3-MUY001.43) at the Route 3 bridge crossing to assess this stream segment as not supporting the recreation use goal for the 2010 water quality assessment.

Muddy Creek - Aquatic Life Use Impairment: A total of two biological monitoring events in 2007 resulted in a SCI score that indicates an impaired macroinvertebrate community.

Rappahannock River - Fish Consumption Use Impairment: The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel, blue catfish, carp, channel catfish, croaker, gizzard shad, and anadromous (coastal) striped bass consumption to no more than two meals per month. The affected area extends from the I-95 bridge above Fredericksburg downstream to the mouth of the river near Stingray Point, including its tributaries Hazel Run up to the I-95 bridge crossing and Claiborne Run up to the Route 1 bridge crossing. Excursions above the water quality criterion based tissue value (TV) of 20 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue were recorded in three species of fish (5 total samples) collected in 2006 at monitoring station 3-RPP080.19 (blue catfish, channel catfish, and gizzard shad). As a result, the waters were assessed as not supporting the fish consumption use.

Rappahannock River – Recreational Use Impairment: Sufficient excursions from the maximum *E. coli* bacteria criterion (11 of 59 samples - 18.6%) were recorded at DEQ's ambient water quality

monitoring station (3-RPP098.81) at Buoy 112 to assess this stream segment as not supporting of the recreation use goal for the 2010 water quality assessment.

- Has a TMDL been prepared?

Muddy Creek Recreational Use Impairment: No. However, this impairment is nested within the Tidal Freshwater Rappahannock River Bacteria TMDL. A new TMDL is not required for this impaired segment of Muddy Creek because the downstream TMDL included modeling, source identification, and reductions that covered the entire watershed. The Rappahannock River Bacteria TMDL was approved by EPA on 05/05/2008.

Muddy Creek Aquatic Life Use Impairment: No.

Rappahannock River Fish Consumption Use Impairment: No.

Rappahannock River Recreational Use Impairment: Yes. TMDL Approved 05/05/2008.

- Will the TMDL include the receiving stream?

None of the TMDLs will/did specifically include the receiving stream. However, all TMDLs will/did consider upstream point source dischargers.

- Is there a WLA for the discharge?

The Tidal Freshwater Rappahannock River Bacteria TMDL included a WLA of **2.44E+11 cfu/year of E. coli bacteria**.

- What is the schedule for the TMDL?

Muddy Creek Recreational Use Impairment - No TMDL Required, Nested within completed TMDL for Tidal Freshwater Rappahannock River.

Muddy Creek Aquatic Life Use TMDL – due by 2022.

Rappahannock River PCB TMDL – Due by 2016.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit? *Note here if you need a drainage area done or a list of Individual or General Permits found within the waterbody.*

A. The Tidal Freshwater Rappahannock River is listed with a PCB impairment (TMDL Due Date: 2016). Although TMDL Guidance Memo No. 09-2001 recommends that minor municipal VPDES facilities with a PCB impaired watershed collect 1 wet sample and 1 dry PCB sample during the permit cycle using EPA Method 1668B, the request for PCB monitoring may be waived if it can be reasonably assumed that the facility does not contribute PCBs (for example, if the facility was built after 1976, when PCB production was banned by the federal government in this year, or if the facility can certify that PCBs were never present on the site). The Assessment/Planning staff does not believe that this facility should be required to perform PCB monitoring due to the fact that it serves a newly built, small residential community with few possible sources that could contribute PCBs.

B. There is a completed downstream TMDL for the nutrient impairments for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

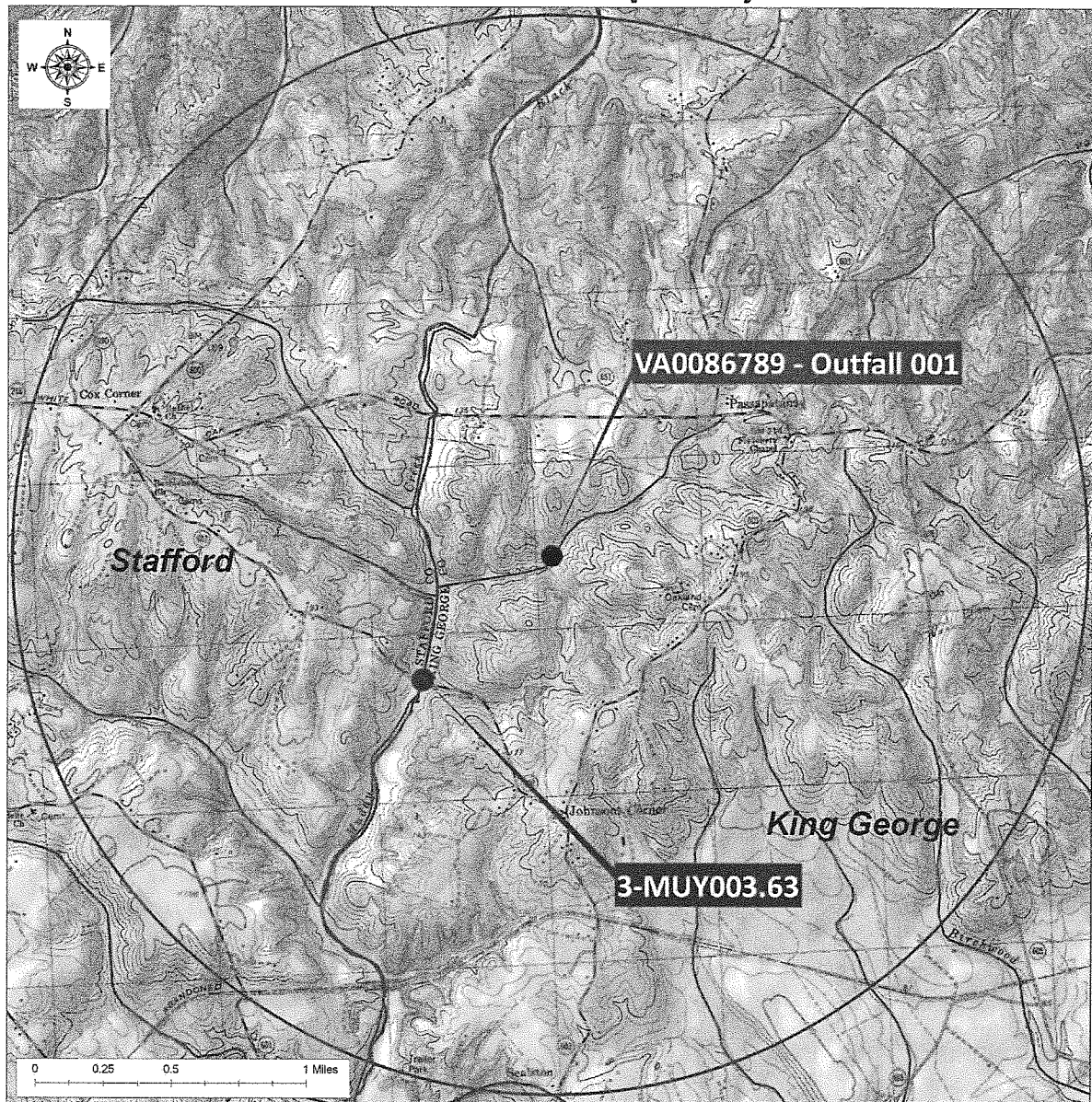
5. Fact Sheet Requirements – Please provide information on other VPDES permits or VADEQ monitoring stations located within a 2 mile radius of the facility. In addition, please provide information on any drinking water intakes located within a 5 mile radius of the facility.

There are no VPDES facilities located within a 2 mile radius of this facility. There is one DEQ monitoring station located within a 2 mile radius of this facility:

Station 3-MUY003.63 – located on Muddy Creek

There are no drinking water intakes within a 5 mile radius of this facility.

182D - Passapatanzy



FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Oakland Park WWTP Permit No.: VA0086789
 Receiving Stream: Muddy Creek, UT
 Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO3) =	mg/L		1Q10 (Annual) =	0 MGD		Annual - 1Q10 Mix =	100 %		Mean Hardness (as CaCO3) =	170 mg/L	
90% Temperature (Annual) =	deg C		7Q10 (Annual) =	0 MGD		- 7Q10 Mix =	100 %		90% Temp (Annual) =	25 deg C	
90% Temperature (Wet season) =	deg C		30Q10 (Annual) =	0 MGD		- 30Q10 Mix =	100 %		90% Temp (Wet season) =	deg C	
90% Maximum pH =	SU		1Q10 (Wet season) =	0 MGD		Wet Season - 1Q10 Mix =	100 %		90% Maximum pH =	7.69 SU	
10% Maximum pH =	SU		30Q10 (Wet season) =	0 MGD		- 30Q10 Mix =	100 %		10% Maximum pH =	SU	
Tier Designation (1 or 2) =	1		30Q5 =	0 MGD					Discharge Flow =	0.14 MGD	
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0 MGD							
Trout Present Y/N? =	n										
Early Life Stages Present Y/N? =	y										

Parameter (ug/l unless noted)	Background Cont.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	na
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	na
Acrylonitrile ^c	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	na
Aldrin ^c	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	3.0E+00	--	na
Ammonia-N (mg/l) (Yearly)	0	1.47E+01	1.84E+00	na	--	1.47E+01	1.84E+00	na	--	--	--	--	--	1.47E+01	1.84E+00	na
Ammonia-N (mg/l) (High Flow)	0	1.47E+01	3.62E+00	na	--	1.47E+01	3.62E+00	na	--	--	--	--	--	1.47E+01	3.62E+00	na
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	na
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	na
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	3.4E+02	1.5E+02	na
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Benzene ^c	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	na
Benzidine ^c	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	na
Benzo (a) anthracene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (b) fluoranthene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (k) fluoranthene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (a) pyrene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Bis(2-Chloroethyl) Ether ^c	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	na
Bis(2-Chloroisopropyl) Ether ^c	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	na
Bis 2-Ethylhexyl Phthalate ^c	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	na
Bromofom ^c	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	na
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	na
Cadmium	0	7.1E+00	1.7E+00	na	--	7.1E+00	1.7E+00	na	--	--	--	--	--	7.1E+00	1.7E+00	na
Carbon Tetrachloride ^c	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	na
Chlordane ^c	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	2.4E+00	4.3E-03	na
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	8.6E+05	2.3E+05	na
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	1.9E+01	1.1E+01	na
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorobromomethane ^c	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.8E-02	4.1E-02	na	--	8.8E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--
Chromium III	0	8.8E+02	1.1E+02	na	--	8.8E+02	1.1E+02	na	--	8.8E+02	1.1E+02	na	--	8.8E+02	1.1E+02	na	--	8.8E+02	1.1E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Chrysene ^c	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	na	1.8E-02
Copper	0	2.2E+01	1.4E+01	na	--	2.2E+01	1.4E+01	na	--	2.2E+01	1.4E+01	na	--	2.2E+01	1.4E+01	na	--	2.2E+01	1.4E+01	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04
DDD ^c	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	na	3.1E-03
DDE ^c	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-03
DDT ^c	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	1.0E-01	na	--	--	1.0E-01	na	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	na	1.9E+02
3,3-Dichlorobenzidine ^c	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	na	2.8E-01
Dichlorobromomethane ^c	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	na	1.7E+02
1,2-Dichloroethane ^c	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,2-Dichloropropane ^c	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	na	1.5E+02
1,3-Dichloropropane ^c	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	na	2.1E+02
Diidrin ^c	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	na	2.8E+02
2,4-Dinitrotoluene ^c	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	na	3.4E+01
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	na	5.1E-08
1,2-Diphenylhydrazine ^c	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	na	3.0E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^c	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide ^c	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene ^c	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene ^c	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Alpha-BHC ^c	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Gamma-BHC ^c (Lindane)	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachlorocyclopentadiene	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hexachloroethane ^c	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Hydrogen Sulfide	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Indeno (1,2,3-cd) pyrene ^c	0	--	--	na	na	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
Iron	0	--	--	na	na	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
Isophorone ^c	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	2.3E+02	2.7E+01	na	--	2.3E+02	2.7E+01	na	--	--	--	--	--	--	--	--	--	2.3E+02	2.7E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride ^c	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	2.9E+02	3.2E+01	na	4.6E+03	2.9E+02	3.2E+01	na	4.6E+03	--	--	--	--	--	--	--	--	2.9E+02	3.2E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine ^c	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine ^c	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine ^c	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total ^c	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol ^c	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.2E+03
Silver	0	8.6E+00	--	na	--	8.6E+00	--	na	--	--	--	--	--	--	--	--	--	8.6E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane ^c	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Tetrachloroethylene ^c	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	--	--	na	4.7E-01
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	6.0E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene ^c	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--
1,1,2-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	--	--	na	7.0E+01
1,1,2-Trichloroethane ^c	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Trichloroethylene ^c	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4,6-Trichlorophenol ^c	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride ^c	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	1.8E+02	1.9E+02	na	2.6E+04	1.8E+02	1.9E+02	na	2.6E+04	--	--	--	--	--	--	--	--	1.8E+02	1.9E+02	na	2.6E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (nitrus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	1.0E+00
Chromium III	6.9E+01
Chromium VI	6.4E+00
Copper	8.5E+00
Iron	na
Lead	1.6E+01
Manganese	na
Mercury	4.8E-01
Nickel	1.9E+01
Selenium	3.0E+00
Silver	3.4E+00
Zinc	7.3E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

0.140 MGD DISCHARGE FLOW - STREAM MIX PER "Mix.exe"

Discharge Flow Used for WQS-WLA Calculations (MG)				0.140	
Stream Flows		Total Mix Flows			
Allocated to Mix (MGD)		Stream + Discharge (MGD)			
Dry Season	Wet Season	Dry Season	Wet Season		
1Q10	0.000	0.140	0.140		
7Q10	0.000	0.140	N/A		
30Q10	0.000	0.140	0.140		
30Q5	0.000	N/A	N/A		
Harm. Mean	0.000	0.140	N/A		
Annual Avg.	0.000	0.140	N/A		
Stream/Discharge Mix Values					
Dry Season		Wet Season			
1Q10 90th% Temp. Mix (deg C)	25.000	0.000			
30Q10 90th% Temp. Mix (deg C)	25.000	0.000			
1Q10 90th% pH Mix (SU)	7.690	7.690			
30Q10 90th% pH Mix (SU)	7.690	7.690			
1Q10 10th% pH Mix (SU)	0.000	N/A			
7Q10 10th% pH Mix (SU)	0.000	N/A			
Calculated				Formula Inputs	
1Q10 Hardness (mg/L as CaCO3)		170.0		170.0	
7Q10 Hardness (mg/L as CaCO3)		170.0		170.0	

Ammonia - Dry Season - Acute		Ammonia - Dry Season - Chronic	
90th Percentile pH (SU)	7.690	90th Percentile Temp. (deg C)	0.000
(7.204 - pH)	-0.486	90th Percentile pH (SU)	7.690
(pH - 7.204)	0.486	MIN	2.850
		MAX	7.000
Trout Present Criterion (mg N/L)	9.809	(7.688 - pH)	-0.002
Trout Absent Criterion (mg N/L)	14.687	(pH - 7.688)	0.002
Trout Present?	n		
Effective Criterion (mg N/L)	14.687	Early LS Present Criterion (mg N)	1.841
		Early LS Absent Criterion (mg N)	1.841
		Early Life Stages Present?	y
		Effective Criterion (mg N/L)	1.841

Ammonia - Wet Season - Acute		Ammonia - Wet Season - Chronic	
90th Percentile pH (SU)	7.690	90th Percentile Temp. (deg C)	0.000
(7.204 - pH)	-0.486	90th Percentile pH (SU)	7.690
(pH - 7.204)	0.486	MIN	2.850
		MAX	7.000
Trout Present Criterion (mg N/L)	9.809	(7.688 - pH)	-0.002
Trout Absent Criterion (mg N/L)	14.687	(pH - 7.688)	0.002
Trout Present?	n		
Effective Criterion (mg N/L)	14.687	Early LS Present Criterion (mg N)	3.618
		Early LS Absent Criterion (mg N)	5.875
		Early Life Stages Present?	y
		Effective Criterion (mg N/L)	3.618

0.140 MGD DISCHARGE FLOW - COMPLETE STREAM MIX

Discharge Flow Used for WQS-WLA Calculations (MGI)				0.140	
100% Stream Flows				Total Mix Flows	
Allocated to Mix (MGD)				Stream + Discharge (MGD)	
Dry Season	Wet Season	Dry Season	Wet Season		
1Q10	0.000	0.000	0.140		
7Q10	0.000	N/A	N/A		
30Q10	0.000	0.140	0.140		
30Q5	0.000	N/A	N/A		
Harm. Mean	0.000	N/A	N/A		
Annual Avg.	0.000	N/A	N/A		
Stream/Discharge Mix Values					
Dry Season		Wet Season			
1Q10	90th% Temp. Mix (deg C)	25.000	0.000		
30Q10	90th% Temp. Mix (deg C)	25.000	0.000		
1Q10	90th% pH Mix (SU)	7.690	7.690		
30Q10	90th% pH Mix (SU)	7.690	7.690		
1Q10	10th% pH Mix (SU)	0.000	N/A		
7Q10	10th% pH Mix (SU)	0.000	N/A		
Calculated				Formula Inputs	
1Q10	Hardness (mg/L as CaCO3) =	170.000	170.000		
7Q10	Hardness (mg/L as CaCO3) =	170.000	170.000		

Ammonia - Dry Season - Acute				Ammonia - Dry Season - Chronic			
90th Percentile pH (SU)				90th Percentile Temp. (deg C)			
(7.204 - pH)				90th Percentile pH (SU)			
(pH - 7.204)				MIN			
Trout Present Criterion (mg N/l)				MAX			
Trout Absent Criterion (mg N/L)				(7.688 - pH)			
Trout Present?				(pH - 7.688)			
Effective Criterion (mg N/L)				Early LS Present Criterion (mg N)			
n				Early LS Absent Criterion (mg N)			
14.687				Early Life Stages Present?			
				Effective Criterion (mg N/L)			
				1.841			

Ammonia - Wet Season - Acute				Ammonia - Wet Season - Chronic			
90th Percentile pH (SU)				90th Percentile Temp. (deg C)			
(7.204 - pH)				90th Percentile pH (SU)			
(pH - 7.204)				MIN			
Trout Present Criterion (mg N/l)				MAX			
Trout Absent Criterion (mg N/L)				(7.688 - pH)			
Trout Present?				(pH - 7.688)			
Effective Criterion (mg N/L)				Early LS Present Criterion (mg N)			
n				Early LS Absent Criterion (mg N)			
14.687				Early Life Stages Present?			
				Effective Criterion (mg N/L)			
				3.618			

Oakland Park WWTP Effluent pH and Temperature Data January 2010- August 2011

	Date	pH (S.U.)	Temp (°C)		Date	pH (S.U.)	Temp (°C)		Date	pH (S.U.)	Temp (°C)	
Jan-10	1	7.47	10	Feb-10	23	7.24	9	Apr-10	17	7.56	15	
	2	7.49	10		24	7.49	9		18	7.33	15	
	3	7.43	10		25	7.42	9		19	7.44	14	
	4	7.07	10		26	7.01	8		20	7.26	15	
	5	7.42	8		27	7.21	9		21	7.54	15	
	6	7.45	9		28	7.53	9		22	7.23	15	
	7	7.42	8		Mar-10	1	7.17		10	23	7.30	16
	8	7.68	7			2	7.05		9	24	7.57	16
	9	7.47	7			3	7.17		9	25	7.51	16
	10	7.07	7			4	7.33		9	26	7.62	17
	11	7.09	6	5		7.02	9	27	7.52	16		
	12	7.75	7	6		7.29	9	28	7.53	15		
	13	7.83	8	7		7.52	10	29	7.24	15		
	14	7.84	7	8		6.94	10	30	7.69	15		
	15	7.84	7	9		7.07	9	May-10	1	7.68	16	
	16	7.87	9	10		7.26	10		2	7.57	18	
	17	7.91	8	11		7.40	11		3	7.75	19	
	18	7.45	9	12		7.05	12		4	7.66	19	
	19	7.67	9	13		6.97	12		5	7.85	19	
	20	7.62	10	14		7.54	13		6	7.58	19	
	21	7.54	10	15		6.60	12		7	7.53	19	
	22	7.11	10	16		6.89	11		8	7.37	19	
	23	7.03	10	17		7.52	11		9	7.57	18	
	24	7.38	11	18		7.39	11		10	7.55	17	
	25	6.96	12	19		6.92	11		11	7.47	17	
	26	7.36	11	20		7.22	14		12	7.39	17	
	27	7.45	10	21		7.16	14		13	7.33	17	
	28	7.22	10	22	6.87	13	14		7.58	19		
	29	7.34	9	23	7.28	13	15		7.38	19		
	30	7.68	9	24	7.00	13	16		7.76	19		
	Feb-10	31	7.63	9	25	7.14	13		17	7.64	19	
1		7.22	6	26	7.59	13	18		7.59	18		
2		7.07	8	27	7.22	14	19	7.21	18			
3		7.41	8	28	7.71	13	20	6.75	18			
4		7.24	8	29	7.34	13	21	6.99	18			
5		7.64	8	30	6.88	13	22	7.24	19			
6				31	7.32	12	23	7.38	19			
7		7.68	6	Apr-10	1	7.36	12	24	7.45	20		
8		7.29	6		2	7.01	13	25	7.68	20		
9		7.06	6		3	7.63	13	26	7.37	21		
10		7.27	6		4	7.60	15	27	7.55	21		
11		7.51	7		5	7.41	15	28	7.56	21		
12		7.46	7		6	7.50	16	29	7.61	21		
13		7.18	6		7	7.81	16	30	7.67	20		
14		7.26	7		8	7.67	17	31	7.72	20		
15		8.25	7		9	7.52	17	Jun-10	1	7.83	22	
16		7.34	8		10	7.72	18		2	7.70	22	
17		7.25	7		11	7.39	18		3	7.80	23	
18		7.52	7		12	7.60	15		4	7.60	22	
19		7.30	8		13	7.58	15		5	7.53	22	
20		7.39	8		14	7.42	15		6	7.61	22	
21		7.59	8	15	7.34	14	7		6.94	23		
22	6.88	10	16	7.60	15	8	7.50		22			

Oakland Park WWTP Effluent pH and Temperature Data January 2010- August 2011

Jun-10	Date	pH (S.U.)	Temp (°C)	Aug-10	Date	pH (S.U.)	Temp (°C)	Sep-10	Date	pH (S.U.)	Temp (°C)
	9	7.38	21		1	7.66	25		23	7.28	23
	10	7.26	21		2	7.83	24		24	7.36	23
	11	7.32	21		3	7.81	25		25	7.44	23
	12	7.43	22		4	7.57	26		26	7.64	22
	13	7.52	22		5	7.62	26		27	7.49	24
	14	7.64	23		6	7.62	26		28	7.90	23
	15	7.71	23		7	7.74	26		29	7.50	23
	16	7.80	23		8	8.10	25		30	7.57	23
	17	7.49	23		9	7.07	26	Oct-10	1	7.02	22
	18	7.46	23		10	7.82	26		2	7.12	22
	19	7.53	23		11	7.83	26		3	7.04	21
	20	7.56	23		12	7.82	26		4	7.38	20
	21	7.47	24		13	7.16	26		5	7.18	19
	22	7.41	24		14	7.36	26		6	7.17	19
	23	7.67	25		15	8.31	26		7	7.30	18
	24	7.70	25		16	7.36	26		8	7.39	18
	25	7.68	25		17	7.50	26		9	7.43	19
	26	7.63	25		18	8.01	26		10	7.39	19
	27	7.70	25		19	7.60	26		11	7.53	19
	28	7.58	25		20	7.69	26		12	7.62	19
	29	7.74	25		21	7.53	26		13	7.71	19
	30	7.18	25		22	7.43	26		14	7.27	19
Jul-10	1	7.76	24		23	7.70	25		15	7.36	19
	2	7.73	24		24	7.55	25		16	7.63	19
	3	7.61	24		25	7.52	24		17	7.46	17
	4	7.83	24		26	7.28	25		18	7.68	18
	5	7.75	24		27	7.36	25		19	7.68	18
	6	7.47	24		28	7.49	25		20	7.51	18
	7	7.49	25		29	7.32	25		21	7.13	18
	8	7.53	25		30	7.46	24		22	7.29	17
	9	7.47	25		31	7.85	25		23	7.57	16
	10	7.51	25	Sep-10	1	7.52	25		24	7.62	17
	11	7.79	25		2	7.72	25		25	7.43	18
	12	7.51	25		3	7.81	25		26	7.42	19
	13	7.35	25		4	7.79	25		27	7.30	20
	14	7.47	25		5	7.64	25		28	7.30	20
	15	7.54	25		6	7.85	23		29	7.29	20
	16	7.50	25		7	7.57	23		30	7.36	19
	17	7.61	25		8	7.48	24	Nov-10	31	7.42	19
	18	7.63	25		9	7.39	23		1	7.44	16
	19	7.63	26		10	7.56	23		2	7.40	15
	20	7.49	25		11	7.60	23		3	7.50	15
	21	7.70	26		12	7.47	23		4	7.41	16
	22	7.56	26		13	7.46	21		5	7.33	16
	23	7.54	26		14	7.67	22		6	7.28	16
	24	7.39	26		15	7.75	22		7	7.19	16
	25	7.91	26		16	7.76	22		8	7.29	14
	26	7.85	26		17	7.60	23		9	7.45	14
	27	7.49	25		18	7.52	23		10	7.42	14
	28	7.47	26		19	7.51	23		11	7.52	14
	29	7.68	26		20	7.35	22		12	7.30	14
	30	7.59	26		21	7.62	21		13	7.43	14
	31	7.63	26		22	7.41	22		14	7.67	13

Oakland Park WWTP Effluent pH and Temperature Data January 2010- August 2011

Nov-10	Date	pH (S.U.)	Temp (°C)	Jan-11	Date	pH (S.U.)	Temp (°C)	Mar-11	Date	pH (S.U.)	Temp (°C)
	15	7.10	14		7	7.38	9		1	7.41	11
	16	7.33	15		8	7.39	9		2	7.33	11
	17	7.19	15		9	7.27	9		3	7.29	12
	18	7.20	15		10	7.19	8		4	7.31	12
	19	7.38	15		11	7.56	8		5	7.33	12
	20	7.36	15		12	7.54	8		6	7.49	13
	21	7.29	14		13	7.57	7		7	7.46	11
	22	7.40	14		14	7.61	7		8	7.77	10
	23	7.72	15		15	7.53	7		9	7.43	10
	24	7.81	15		16	7.34	8		10	7.39	12
	25	7.61	14		17	7.43	8		11	7.23	13
	26	7.58	15		18	7.37	8		12	7.21	13
	27	7.56	14		19	7.20	9		13	7.19	13
	28	7.61	14		20	7.45	9		14	7.05	12
Dec-10	29	7.11	13		21	7.47	9		15	7.21	11
	30	7.33	15		22	7.44	8		16	7.36	11
	1	7.56	15		23	7.31	8		17	7.40	12
	2	7.57	15		24	7.58	7		18	7.43	12
	3	7.55	14		25	7.39	7		19	7.47	13
	4	7.61	14		26	7.36	8		20	7.50	12
	5	7.53	14		27	7.29	8		21	7.39	13
	6	7.13	11		28	7.31	8		22	7.28	13
	7	7.51	10		29	7.40	8		23	7.15	13
	8	7.26	10		30	7.26	8		24	7.28	14
	9	7.37	9		31	7.23	8		25	7.36	13
	10	7.46	9	Feb-11	1	7.78	8.0		26	7.16	13
	11	7.52	9		2	7.52	10.0		27	7.20	13
	12	7.46	9		3	7.65	9.0		28	7.38	11
	13	7.70	10		4	7.60	10.0		29	7.40	11
	14	7.54	9		5	7.53	10.0		30	7.40	10
	15	7.39	8		6	7.42	10.0		31	7.30	11
	16	7.47	8		7	7.30	9.0	Apr-11	1	7.37	12
	17	7.56	8		8	7.35	9.0		2	7.31	12
	18	7.42	9		9	7.37	9.0		3	7.27	12
	19	7.51	8		10	7.47	8.0		4	6.99	13
	20	7.35	8		11	7.50	9.0		5	7.69	13
	21	7.21	8		12	7.44	9.0		6	7.36	13
	22	7.45	9		13	7.43	10.0		7	7.43	13
	23	7.50	10		14	7.35	9.0		8	7.44	14
	24	7.55	8		15	7.51	9.0		9	7.40	14
	25	7.65	8		16	7.66	9.0		10	7.31	15
	26	7.27	8		17	7.42	9.0		11	7.05	15
	27	7.55	8		18	7.52	11.0		12	6.84	17
	28	7.28	8		19	7.58	12.0		13	7.24	16
Jan-11	29	7.19	8		20	7.60	12.0		14	7.30	15
	30	7.42	7		21	7.47	12.0		15	7.28	15
	31	7.47	8		22	7.40	12.0		16	7.23	15
	1	7.30	11		23	7.33	9.0		17	7.11	15
	2	7.19	12		24	7.33	9.0		18	7.23	16
	3	7.40	10		25	7.29	11.0		19	6.98	16
	4	7.74	10		26	7.27	11.0		20	7.18	17
	5	7.29	9		27	7.22	12.0		21	7.42	17
	6	7.11	9		28	7.40	12.0		22	7.30	16

Oakland Park WWTP Effluent pH and Temperature Data January 2010- August 2011

Apr-11	Date	pH (S.U.)	Temp (°C)	Jun-11	Date	pH (S.U.)	Temp (°C)	Aug-11	Date	pH (S.U.)	Temp (°C)	
	23	7.44	17		15	7.30	22		7	7.36	26	
	24	7.34	17		16	7.26	22		8	7.66	26	
	25	7.14	18		17	7.35	22		9	6.96	26	
	26	7.20	19		18	7.36	23		10	7.33	26	
	27	7.27	19		19	7.48	23		11	7.55	26	
	28	7.30	19		20	7.46	23		12	7.61	25	
May-11	29	7.27	19	21	7.44	23	13	7.59	26			
	30	7.33	18	22	7.53	23	14	7.37	25			
	1	7.22	17	23	7.55	24	15	7.61	25			
	2	7.20	18	24	7.46	24	16	7.80	24			
	3	7.26	18	25	7.44	24	17	7.46	25			
	4	7.58	18	26	7.57	23	18	7.19	24			
	5	7.28	17	27	7.56	24	19	7.30	25			
	6	7.31	17	28	7.43	24	20	7.33	25			
	7	7.25	18	29	7.49	25	21	7.52	24			
	8	7.13	18	30	7.39	23	22	7.52	25			
	9	7.20	18	Jul-11	1	7.33	24	23	7.51	24		
	10	7.22	17		2	7.39	24	24	7.53	24		
	11	7.39	18		3	7.21	25	25	7.51	24		
	12	7.42	18		4	7.47	24	26	7.55	25		
	13	7.40	18		5	7.33	25	27	7.60	25		
	14	7.39	18		6	7.34	25	28	7.52	25		
	15	7.37	18		7	7.40	25	29	7.47	24		
	16	7.19	19		8	7.31	25	30	7.68	23		
	17	7.41	19		9	7.43	25	31	7.49	23		
	18	7.43	20		10	7.47	25	pH 90th Percentile 7.69 SU Temperature 90th Percentile 25°C				
	19	7.27	20		11	7.20	26					
	20	7.31	20		12	7.25	26					
	21	7.34	20		13	7.55	26					
	22	7.29	20		14	7.39	25					
	23	7.31	21	15	7.43	24						
	24	7.35	21	16	7.33	25						
	25	7.53	21	17	7.32	25						
	26	7.50	21	18	7.27	25						
	27	7.47	21	19	7.44	25						
	28	7.42	21	20	7.40	26						
	29	7.43	22	21	7.63	26						
	30	7.47	23	22	7.61	26						
	31	7.34	23	23	7.59	26						
Jun-11	1	7.49	24	24	7.49	26						
	2	7.41	23	25	7.43	26						
	3	7.37	22	26	7.80	26						
	4	7.40	22	27	7.69	26						
	5	7.23	22	28	7.66	26						
	6	7.14	22	29	7.58	26						
	7	7.41	22	30	7.47	26						
	8	7.43	23	31	7.37	26						
	9	7.44	23	Aug-11	1	7.62						26
	10	7.37	23		2	7.41						26
	11	7.45	23		3	7.68						26
	12	7.44	24		4	7.72						24
	13	7.31	24		5	7.69						24
	14	7.31	23		6	7.61						25

Oakland Park Wastewater Treatment Plant
Effluent Hardness Data September 2008 - August 2011

Date	Hardness (mg/L)	Date	Hardness (mg/L)	Date	Hardness (mg/L)	Date	Hardness (mg/L)	Date	Hardness (mg/L)
9/17/2008	94.1	2/5/2009	60	6/16/2009	262	2/9/2010	177	4/26/2011	249
9/28/2008	78	2/6/2009	60	6/28/2009	376	2/16/2010	160	5/3/2011	249
9/30/2008	86	2/8/2009	82	6/23/2009	435	2/23/2010	70	5/10/2011	140
10/2/2008	83	2/10/2009	72	6/30/2009	219	3/3/2010	162	5/17/2011	227
10/5/2008	78	2/12/2009	120	7/2/2009	191	3/10/2010	168	5/24/2011	210
10/7/2008	76	2/13/2009	73	7/5/2009	257	3/17/2010	179	5/31/2011	238
10/9/2008	158	2/15/2009	44	7/9/2009	156	3/24/2010	131	6/7/2011	232
10/12/2008	181	2/19/2009	113	7/12/2009	409	3/31/2010	162	6/14/2011	218
10/14/2008	119	2/22/2009	140	7/14/2009	381	4/6/2010	172	6/21/2011	208
10/16/2008	160	2/24/2009	142	7/16/2009	528	4/20/2010	185	6/28/2011	210
10/19/2008	196	2/26/2009	145	7/19/2009	458	4/27/2010	165	7/5/2011	206
10/23/2008	120	3/3/2009	65	7/26/2009	372	5/4/2010	196	7/12/2011	213
10/26/2008	3	3/4/2009	62	7/7/2009	413	5/11/2010	206	7/19/2011	227
10/28/2008	299	3/5/2009	81	7/23/2009	377	5/18/2010	203	7/26/2011	186
10/30/2008	242	3/8/2009	122	7/30/2009	207	5/25/2010	205	8/2/2011	226
11/2/2008	232	3/10/2009	87	7/28/2009	347	6/1/2010	213	8/9/2011	214
11/4/2008	172	3/12/2009	80	8/2/2009	139	6/8/2010	216	8/16/2011	240
11/6/2008	204	3/15/2009	80	8/4/2009	120	6/15/2010	166	8/23/2011	233
11/9/2008	205	3/17/2009	153	8/6/2009	202	6/22/2010	223	8/30/2011	160
11/11/2008	180	3/19/2009	117	8/9/2009	168	6/29/2010	198	Average Hardness = 170 mg/L	
11/13/2008	13	3/22/2009	133	8/11/2009	130	7/6/2010	213		
11/14/2008	152	3/24/2009	110	8/13/2009	152	7/16/2010	221		
11/16/2008	160	3/26/2009	125	8/16/2009	184	7/20/2010	217		
11/18/2008	155	3/29/2009	99	8/18/2009	216	7/27/2010	221		
11/20/2008	153	3/31/2009	119	8/20/2009	181	8/3/2010	158		
11/23/2008	189	4/2/2009	109	8/23/2009	121	8/10/2010	255		
11/25/2008	156	4/5/2009	176	8/25/2009	145	8/17/2010	228		
11/27/2008	131	4/7/2009	117	8/27/2009	127	8/24/2010	206		
11/30/2008	172	4/9/2009	144	8/30/2009	131	8/31/2010	196		
12/2/2008	117	4/12/2009	316	9/1/2009	150	9/7/2010	221		
12/3/2008	89	4/14/2009	225	9/3/2009	165	9/14/2010	222		
12/4/2008	124	4/16/2009	161	9/6/2009	148	9/21/2010	194		
12/7/2008	125	4/19/2009	166	9/8/2009	183	9/28/2010	213		
12/9/2008	144	4/21/2009	114	9/10/2009	149	11/3/2010	213		
12/11/2008	134	4/23/2009	148	9/13/2009	144	11/10/2010	214		
12/14/2008	96	4/26/2009	153	9/15/2009	110	11/17/2010	220		
12/16/2008	124	4/28/2009	128	9/17/2009	157	11/24/2010	205		
12/18/2008	152	4/30/2009	89	9/20/2009	138	11/30/2010	212		
12/21/2008	176	5/3/2009	90	9/22/2009	154	12/7/2010	221		
12/23/2008	107	5/5/2009	90	9/24/2009	146	12/14/2010	223		
12/25/2008	109	5/7/2009	265	9/27/2009	146	12/21/2010	143		
12/28/2008	153	5/12/2009	85	9/29/2009	174	12/28/2010	132		
12/30/2008	122	5/14/2009	125	10/6/2009	155	1/4/2011	110		
1/1/2009	102	5/17/2009	109	10/7/2009	157	1/11/2011	209		
1/4/2009	122	5/19/2009	34	10/13/2009	179	1/18/2011	201		
1/9/2009	65	5/21/2009	126	10/20/2009	156	1/25/2011	175		
1/8/2009	58	5/24/2009	128	10/27/2009	168	2/1/2011	163		
1/11/2009	84	5/26/2009	137	11/3/2009	177	2/8/2011	173		
1/13/2009	55	5/28/2009	150	11/10/2009	202	2/15/2011	220		
1/15/2009	81	6/7/2009	148	11/17/2009	154	2/22/2011	208		
1/18/2009	48	6/4/2009	135	11/24/2009	87	3/1/2011	215		
1/20/2009	94	6/2/2009	171	12/8/2009	181	3/8/2011	192		
1/21/2009	238	6/11/2009	138	10/15/2009	174	3/15/2011	128		
1/22/2009	74	6/9/2009	34	12/22/2009	207	3/22/2011	202		
1/25/2009	69	6/18/2009	398	12/29/2009	135	3/29/2011	210		
1/27/2009	64	6/25/2009	256	1/5/2010	172	4/5/2011	220		
1/29/2009	57	6/24/2009	435	1/19/2010	173	4/12/2011	197		
2/1/2009	69	6/21/2009	422	2/2/2010	161	4/19/2011	235		

VaFWIS - Department of Game and Inland Fisheries

38,17,16.0 -77,19,30.9

is the Search Point

Submit

Cancel

Search Point

- ☒ Change to "clicked" map point
- ☐ Fixed at 38,17,16.0 - 77,19,30.9

Show Position Rings

- ☒ Yes ☐ No

1 mile and 1/4 mile at the Search Point

Show Search Area

- ☒ Yes ☐ No

2 Search distance miles radius

Search Point is at map center

Base Map Choices

Topography

Map Overlay Choices

Current List: Position, Search

Map Overlay Legend

- ☒ Position Rings
1 mile and 1/4 mile at the Search Point
- ☐ 2 mile radius Search Area



Point of Search 38,17,16.0 -77,19,30.9

Map Location 38,17,16.0 -77,19,30.9

- Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude
- ☐ Decimal Degrees Latitude - Longitude
 - ☐ Meters UTM NAD83 East North Zone
 - ☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft.terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 291847 and top 4245116. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic
Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
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map assembled 2011-12-12 14:24:31 (qa/qc December 1, 2011 15:16 - tn=367311 dist=32181)

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VaFWIS Initial Project Assessment Report Compiled on 12/12/2011, 2:28:36 PM

[Help](#)

Known or likely to occur within a **2 mile radius around point 38,17,16.0 -77,19,31.0**
in **099 King George County, 179 Stafford County, VA**

[View Map of
Site Location](#)

489 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 21) (21 species with Status* or Tier I** or Tier II**)

<u>BOVA Code</u>	<u>Status*</u>	<u>Tier**</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Database(s)</u>
060003	FESE	II	<u>Wedgemussel, dwarf</u>	Alasmidonta heterodon		BOVA
040096	ST	I	<u>Falcon, peregrine</u>	Falco peregrinus		CBC
040129	ST	I	<u>Sandpiper, upland</u>	Bartramia longicauda		BOVA
040293	ST	I	<u>Shrike, loggerhead</u>	Lanius ludovicianus		BOVA,CBC
040385	ST	I	<u>Sparrow, Bachman's</u>	Aimophila aestivalis		HU6
040093	FSST	II	<u>Eagle, bald</u>	Haliaeetus leucocephalus		BOVA,CBC,HU6
040292	ST		<u>Shrike, migrant loggerhead</u>	Lanius ludovicianus migrans		BOVA
100248	FS	I	<u>Fritillary, regal</u>	Speyeria idalia idalia		BOVA,HU6
030063	CC	III	<u>Turtle, spotted</u>	Clemmys guttata		BOVA,HU6
010077		I	<u>Shiner, bridle</u>	Notropis bifrenatus		BOVA
040372		I	<u>Crossbill, red</u>	Loxia curvirostra		BOVA,CBC
040225		I	<u>Sapsucker, yellow-bellied</u>	Sphyrapicus varius		BOVA,CBC
040319		I	<u>Warbler, black-throated green</u>	Dendroica virens		BOVA
010032		II	<u>Sturgeon, Atlantic</u>	Acipenser oxyrinchus		BOVA
040038		II	<u>Bittern, American</u>	Botaurus lentiginosus		CBC,HU6
040052		II	<u>Duck, American black</u>	Anas rubripes		BOVA,CBC,HU6
040213		II	<u>Owl, northern saw-whet</u>	Aegolius acadicus		CBC,HU6
040105		II	<u>Rail, king</u>	Rallus elegans		BOVA,CBC,HU6
040187		II	<u>Tern, royal</u>	Sterna maxima maximus		BOVA
040320		II	<u>Warbler, cerulean</u>	Dendroica cerulea		BOVA,HU6
040266		II	<u>Wren, winter</u>	Troglodytes troglodytes		BOVA,CBC

To view **All 489 species** [View 489](#)

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate;
FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;
III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 12/12/2011, 2:28:36 PM I367311.0 report- IPA searchType- R dist- 3218
poi= 38,17,16.0-77,19,31.0

12/12/2011 9:56:53 AM

Facility = Oakland Park WWTP
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 14.7
WLAc = 1.84
Q.L. = .2
samples/mo. = 12
samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average = 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 3.71251297188601
Average Weekly limit = 2.7154942241635
Average Monthly LImit = 2.02268826934252

The data are:

9

Unit of measurement is mg/L.

2/27/2012 2:38:49 PM

Facility = Oakland Park WWTP 2/27/12
Chemical = Total Recoverable Copper
Chronic averaging period = 4
WLAA = 22
WLA_C = 14
Q.L. = 8.5
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 41
Expected Value = 14.1450
Variance = 37.2173
C.V. = 0.431289
97th percentile daily values = 28.3435
97th percentile 4 day average = 20.0662
97th percentile 30 day average = 16.0953
< Q.L. = 12
Model used = delta lognormal

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 19.7749578305792
Average Weekly limit = 19.7749578305792
Average Monthly LLimit = 19.7749578305792

The data are:

9.1
13.7
28.2
18.3
14.6
10.7
4.6
7.8
14.5
4.5
4
11.6
8.9
14.2
17.2
22.7
28.6
15.1
6.2
6.5
7
3
3.3
7
16.4
32
13.6
17.7
12
17.7
18
12.6
10.9
9.2
20.7
25
8
16.2
11.2
17.2
1

Units of measurements are ug/L.

Oakland Park WWTP Copper Data
(January 2008 - August 2011)

Date	Dissolved (µg/L)	Total Recoverable (µg/L)
1/30/2008		15.3
2/7/2008		13
2/21/2008		15.4
3/6/2008	9.1	9.1
3/20/2008	13.7	14.8
4/24/2008	28.2	33.2
5/8/2008	18.3	19.4
6/12/2008		16.9
7/2/2008		22.3
8/21/2008		25.5
9/17/2008	14.6	14.8
10/7/2008	10.7	10.8
11/14/2008	4.6	3.1
12/3/2008	7.8	9.2
1/21/2009	14.5	17.4
2/12/2009	<1	1
3/10/2009	4.5	4.9
4/7/2009	4	5.2
5/7/2009	11.6	10.5
6/2/2009	8.9	9.3
7/10/2009	14.2	14.2
8/7/2009	17.2	18.1
9/1/2009	22.7	23.5
10/7/2009	28.6	30
11/3/2009	15.1	15.8
12/2/2009	6.2	6.8
1/6/2010	6.5	7.8
2/4/2010	7	7.4
3/4/2010	3	3
4/1/2010	3.3	4.1
5/6/2010	7	7
6/9/2010	16.4	16.9
7/7/2010	32	34.5
8/6/2010	13.6	14.7
9/9/2010	17.7	18.4
10/7/2010	12	12.9
11/2/2010	17.7	18.5
12/7/2010	18	19
1/19/2011	12.6	15.8
2/9/2011	10.9	18.3
3/9/2011	9.2	14.9
4/12/2011	20.7	26
5/4/2011	25	32.7
5/12/2011	8	10.1
6/2/2011	16.2	13.6
7/19/2011	11.2	11.5
8/2/2011	17.9	16.9

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in King George County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2011 to 5:00 p.m. on XXX, 2011

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: King George County Service Authority, 9207 Kings Highway, King George, VA 22485, VA0086789

NAME AND ADDRESS OF FACILITY: Oakland Park WWTP, 1015 French Court, King George, VA 22485

PROJECT DESCRIPTION: The King George County Service Authority has applied for a reissuance of a permit for the public Oakland Park Wastewater Treatment Plant. The applicant proposes to release treated sewage wastewaters from the wastewater treatment plant at a rate of 0.14 million gallons per day into a water body. The sludge will be disposed by taking it to the King George County's Dahlgren Wastewater Treatment Plant (VA0026514) for further digestion and dewatering prior to disposal at the King George Landfill. The facility proposes to release the treated sewage in the Muddy Creek, UT in King George County in the Rappahannock watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, cBOD₅, Total Suspended Solids, TKN, Dissolved Oxygen, *E. coli*, Total Recoverable Copper, Total Nitrogen and Total Phosphorus. The permit will also contain effluent monitoring for Total Hardness (as CaCO₃).

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Joan C. Crowther

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

Douglas W. Domenech
Secretary of Natural Resources

13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3801
www.deq.virginia.gov

David K. Paylor
Director

Thomas A. Faha
Regional Director

**STATE WATER CONTROL BOARD ENFORCEMENT ACTION
A SPECIAL ORDER BY CONSENT
ISSUED TO
KING GEORGE COUNTY SERVICE AUTHORITY
FOR THE
PURKINS CORNER WASTEWATER TREATMENT PLANT
(VPDES Permit No. VA0070106)
AND THE
OAKLAND PARK WASTEWATER TREATMENT PLANT
(VPDES Permit No. VA0086789)**

SECTION A: Purpose

This is a Consent Special Order issued under the authority of Va. Code §§ 62.1-44.15 between the State Water Control Board and King George County Service Authority regarding the Purkins Corner Wastewater Treatment Plant and the Oakland Park Wastewater Treatment Plant for the purpose of resolving certain violations of State Water Control Law and Regulations.

SECTION B: Definitions

Unless the context clearly indicates otherwise, the following words and terms have the meaning assigned to them below:

1. "Va. Code" means the Code of Virginia (1950), as amended.
2. "Board" means the State Water Control Board, a permanent citizens' board of the Commonwealth of Virginia as described in Va. Code §§ 10.1-1184 and 62.1-44.7.
3. "Department" or "DEQ" means the Department of Environmental Quality, an agency of the Commonwealth of Virginia as described in Va. Code § 10.1-1183.

4. "Director" means the Director of the Department of Environmental Quality.
5. "KGCSA" means the King George County Service Authority.
6. "NRO" means the Northern Regional Office of DEQ, located in Woodbridge, Virginia.
7. "O&M" means operations and maintenance.
8. "Oakland Park WWTP" means the Oakland Park Wastewater Treatment Plant located in King George County, Virginia.
9. "Oakland Permit" means Virginia Pollutant Discharge Elimination System (VPDES) Permit No. VA0086789
10. "Order" means this document, also known as a Consent Special Order.
11. "Purkins Corner WWTP" means the Purkins Corner Wastewater Treatment Plant located in King George County, Virginia.
12. "Purkins Permit" means Virginia Pollutant Discharge Elimination System (VPDES) Permit No. VA0070106.

SECTION C: Findings of Fact and Conclusions of Law

1. KGCSA owns and operates the Purkins Corner WWTP and the Oakland Park WWTP which are located in King George County, Virginia. The Purkins WWTP is the subject of the Purkins Permit, which authorizes KGCSA to discharge to Pine Hill Creek, located in the Potomac River Basin. The Oakland Park WWTP is the subject of the Oakland Permit, which authorizes KGCSA to discharge to Muddy Creek in the Rappahannock River Basin.
2. The Board has evidence to indicate that KGCSA violated VPDES Permit Regulation, Part 9 VAC 25-31-50(A) and the Purkins Permit as evidenced by discharge monitoring reports ("DMR") that show exceedances of permitted limits for TKN, TSS, Carbonaceous Biochemical Oxygen Demand (CBOD₅), pH, E. Coli, Total Phosphorus, Total Recoverable Copper, Total Recoverable Lead, Total Recoverable Selenium, Total Recoverable Silver, and Total Recoverable Zinc based upon the permitted limits, as follows:
 - a. TKN – Exceedances reported for February and March 2007, February 2008, April 2008, June 2008, October and December 2008, January 2009, February 2009, and April through November 2009, and January through April 2010;
 - b. TSS – Exceedances reported for January and February 2007, April 2007 and May 2007, January through March 2008, December 2008, January 2009,

- February 2009, and April 2009, January 2010, February 2010, May 2010, and June 2010;
- c. CBOD₅ – Exceedances reported for February 2007; February 2008; December 2008, and January through April 2009;
 - d. pH – Exceedances reported for January 2008;
 - e. E. Coli – Exceedances reported for February 2008, March 2008, April 2008, and March 2009;
 - f. Total Phosphorus – Exceedances reported for September 2008, October 2008, December 2008, and February through April 2009, July 2009, and January 2010;
 - g. Total Recoverable Copper-Exceedances reported for March 2007, May through July 2007, October 2007, December 2007, January through February 2008, July 2009, January 2010, and August 2010;
 - h. Total Recoverable Lead-Exceedances reported for September and October 2007;
 - i. Total Recoverable Selenium-Exceedances reported for July 2007;
 - j. Total Recoverable Silver-Exceedances reported for October 2007 and January 2008;
 - k. Total Recoverable Zinc-Exceedances reported for January through December 2007 and January 2008.
3. In addition to the foregoing permit limit exceedances at the Purkins WWTP:
- a. KGCSA failed to submit revised O&M manual following changes at the Purkins WWTP in violation of Part I, page 5, Section C.3 of the Permit.
 - b. KGCSA failed to timely correct deficiencies found in the UV system and noted in inspection reports dated April 25, 2008, May 22, 2008, July 18, 2008, September 23, 2008, and December 15, 2008 in violation of Part I, page 6, Section Q of the Permit.
4. The Board also has evidence to indicate that KGCSA violated VPDES Permit Regulation, Part 9 VAC 25-31-50.A and the Oakland Park Permit as evidenced by discharge monitoring reports that show exceedances of permitted effluent limits for Total Recoverable Copper, Total Kjeldahl Nitrogen (TKN), Total Suspended Solids (TSS), Total Phosphorus, Carbonaceous Biochemical Oxygen Demand (CBOD₅), and Dissolved Oxygen (DO) as follows:

- a. Copper (Reported as Total Recoverable and Dissolved) – Exceedances reported for January through May 2007, July through October 2007, January through September 2008, January 2009, August 2009 through October 2009, and June through September 2010;
 - b. TKN – Exceedances reported for January through May 2007, November 2007, January and February 2008, May 2008, October through December 2008, and January through March 2009;
 - c. TSS – Exceedances reported for November and December 2007, January 2008, and April 2008;
 - d. Total Phosphorus – Exceedance reported for April 2008 and May 2010;
 - e. DO – Exceedance for May 2007;
 - f. CBOD₅ – Exceedance for July 2009, March 2010, and June 2010;
 - g. CL2- Violation for September 2010
5. These exceedances and violations include all exceedances and violations known by the Board for the period of 2007 to 2010 for both Purkins Corner WWTP and Oakland Park WWTP.
 6. Based on the results of the DMRs and the inspections reports, the Board concludes that KGCSA has violated the Purkins Permit, the Oakland Permit and 9 VAC 25-31-50(A) by discharging treated sewage and municipal wastes from the Purkins WWTP and Oakland Park WWTP while concurrently failing to comply with the conditions of the Permits, as described in paragraphs C(2) through C(4) which include all known violations of KGCSA by the Board for the period of 2007 to November 2010 for both WWTPs.
 7. KGCSA asserts that it will be capable of meeting permit effluent limits once the plant upgrades are complete. In order for KGCSA to return to compliance, DEQ staff and representatives of KGCSA have agreed to the Schedule of Compliance, which is incorporated as Appendix A and Appendix B of this Order.

SECTION D: Agreement and Order

Accordingly, by virtue of the authority granted it in Va. Code §§ 62.1-44.15, the Board orders KGCSA, and KGCSA agrees to:

1. Perform the actions described in Appendices A, B, C, D, and E of this Order; and
2. Pay a civil charge of \$50,000 in settlement of the violations cited in this Order, to be paid as follows:

- a. KGCSA shall pay \$ 12,500 of the civil charge within 30 days of the effective date of this Order. Payment shall be made by check, certified check, money order or cashier's check payable to the "Treasurer of Virginia," delivered to:

Receipts Control
Department of Environmental Quality
Post Office Box 1104
Richmond, Virginia 23218

KGCSA shall include its Federal Employer Identification Number (FEIN) with the civil charge payment and shall indicate that the payment is being made in accordance with the requirements of this Order for deposit into the Virginia Environmental Emergency Response Fund (VEERF).

- b. KGCSA shall satisfy \$37,500 of the civil charge by satisfactorily completing the Supplemental Environmental Project (SEP) described Appendix C of this Order.
- c. The net project costs of the SEP to KGCSA shall not be less than the amount set forth in Paragraph D.2.b. If it is, KGCSA shall pay the remaining amount in accordance with Paragraph D.2.a of this Order, unless otherwise agreed to by the Department. "Net project cost" means the net present after-tax cost of the SEP, including tax savings, grants, and first-year cost reductions and other efficiencies realized by virtue of project implementation. If the proposed SEP is for a project for which the party will receive an identifiable tax savings (e.g., tax credits for pollution control or recycling equipment), grants, or first-year operation cost reductions or other efficiencies, the net project cost shall be reduced by those amounts. The costs of those portions of SEPs that are funded by state or federal low-interest loans, contracts, or grants shall be deducted.
- d. By signing this Order KGCSA certifies that it has not commenced performance of the SEP.
- e. KGCSA acknowledges that it is solely responsible for completing the SEP project. Any transfer of funds, tasks, or otherwise by KGCSA to a third party, shall not relieve KGCSA of its responsibility to complete the SEP as described in this Order.
- f. In the event it publicizes the SEP or the SEP results, KGCSA shall state in a prominent manner that the project is part of a settlement of an enforcement action.
- g. The Department has the sole discretion to:
 - i. Authorize any alternate, equivalent SEP proposed by the Facility; and
 - ii. Determine whether the SEP, or alternate SEP, has been completed in a satisfactory manner.

- h. Should the Department determine that KGCSA has not completed the SEP, or alternate SEP, in a satisfactory manner, the Department shall so notify KGCSA in writing. Within 30 days of being notified, KGCSA shall pay the amount specified in Paragraph D.2.b, above, as provided in Paragraph D.2.a, above.

SECTION E: Administrative Provisions

1. The Board may modify, rewrite, or amend the Order with the consent of KGCSA, for good cause shown by KGCSA, or on its own motion after notice and opportunity to be heard.
2. This Order only addresses and resolves those violations specifically identified herein. This Order shall not preclude the Board or the Director from taking any action authorized by law, including but not limited to: (1) taking any action authorized by law regarding any additional, subsequent, or subsequently discovered violations; (2) seeking subsequent remediation of the facility as may be authorized by law; or (3) taking subsequent action to enforce the Order. This Order shall not preclude appropriate enforcement actions by other federal, state, or local regulatory authorities for matters not addressed herein.
3. For purposes of this Order and subsequent actions with respect to this Order only, KGCSA admits to the jurisdictional allegations, and agrees not to contest, but neither admits nor denies, the findings of fact and conclusions of law in this Order.
4. KGCSA consents to venue in the Circuit Court of the City of Richmond for any civil action taken to enforce the terms of this Order.
5. KGCSA declares it has received fair and due process under the Administrative Process Act, Va. Code §§ 2.2-4000 *et seq.*, and the State Water Control Law and it waives the right to any hearing or other administrative proceeding authorized or required by law or regulation, and to any judicial review of any issue of fact or law contained herein. Nothing herein shall be construed as a waiver of the right to any administrative proceeding for, or to judicial review of, any action taken by the Board to enforce this Order.
6. Failure by KGCSA to comply with any of the terms of this Order shall constitute a violation of an order of the Board. Nothing herein shall waive the initiation of appropriate enforcement actions or the issuance of additional orders as appropriate by the Board or the Director as a result of such violations. Nothing herein shall affect appropriate enforcement actions by any other federal, state, or local regulatory authority.
7. If any provision of this Order is found to be unenforceable for any reason, the remainder of the Order shall remain in full force and effect.

8. KGCSA shall be responsible for failure to comply with any of the terms and conditions of this Order unless compliance is made impossible by earthquake, flood, other acts of God, war, strike, or such other occurrence. KGCSA shall show that such circumstances were beyond its control and not due to a lack of good faith or diligence on its part. KGCSA shall notify the DEQ Regional Director in writing when circumstances are anticipated to occur, are occurring, or have occurred that may delay compliance or cause noncompliance with any requirement of the Order. Such notice shall set forth:
 - a. the reasons for the delay or noncompliance;
 - b. the projected duration of any such delay or noncompliance;
 - c. the measures taken and to be taken to prevent or minimize such delay or noncompliance; and
 - d. the timetable by which such measures will be implemented and the date full compliance will be achieved.

Failure to so notify the Regional Director within 24 hours of learning of any condition above, which KGCSA intends to assert, will result in the impossibility of compliance, shall constitute a waiver of any claim to inability to comply with a requirement of this Order.

9. This Order is binding on the parties hereto, their successors in interest, designees and assigns, jointly and severally.
10. Any plans, reports, schedules or specifications attached hereto or submitted by KGCSA and approved by the Department pursuant to this Order are incorporated into this Order. Any non-compliance with such approved documents shall be considered a violation of this Order.
11. This Order shall become effective upon execution by both the Director or his designee and KGCSA. Notwithstanding the foregoing, KGCSA agrees to be bound by any compliance date which precedes the effective date of this Order.
12. This Order shall continue in effect until:
 - a. KGCSA petitions the Director or his designee to terminate the Order after it has completed all of the requirements of the Order and the Director or his designee approves the termination of the Order; or
 - b. The Director or Board terminates the Order in his or its sole discretion upon 30 days written notice to KGCSA.

Consent Order

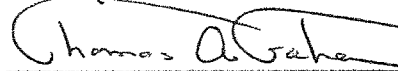
Purkins Corner and Oakland Park, WWTPs

Page 8 of 15

Termination of this Order, or any obligation imposed in this Order, shall not operate to relieve KGCSA from its obligation to comply with any statute, regulation, permit condition, other order, certificate, certification, standard, or requirement otherwise applicable.

13. By its signature below, KGCSA voluntarily agrees to the issuance of this Order.

And it is so ORDERED this 4th day of August, 2011.



Thomas A. Faha, Regional Director
Department of Environmental Quality

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Consent Order
Purkins Corner and Oakland Park, WWTPs
Page 9 of 15
KGCSA voluntarily agrees to the issuance of this Order.

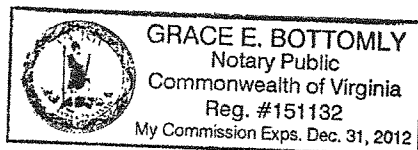
By: Christopher F. Thomas
Date: June 22, 2011

Commonwealth of Virginia
City/County of King George

The foregoing document was signed and acknowledged before me this 22nd day of
June, 2011, by Christopher F. Thomas, who is
(name)
General Manager of KGCSA, on behalf of KGCSA.
(title)

Grace E. Bottomly
Notary Public

My commission expires: 12/31/2012



APPENDIX A

KGCSA shall at the Purkins WWTP:

1. Achieve compliance with permit effluent limitations within 60 days of DEQ issuance of a Certificate to Operate (CTO) for any modification or upgrade of the Purkins Corner WWTP or no later than January 15, 2012, whichever occurs first. The modification or upgrade shall be in accordance with the approved Certificate to Construct issued to KGCSA.
2. Submit monthly progress reports to DEQ outlining the projects and steps taken to achieve compliance as outlined in paragraph 1. Said monthly reports shall be due on the 10th of each month and submitted as an attachment with the monthly Discharge Monitoring Report.
3. Operate the WWTP in a manner that produces the best quality effluent of which it is capable in order to minimize impacts to state water during the period of time when it is implementing the corrective action referenced in paragraph one.

APPENDIX B

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR THE PURKINS WWTP

During the period beginning with the effective date of this Order and lasting until either 60 days after CTO issuance for any modification and upgrade of the Purkins Corner WWTP or by January 15, 2012, whichever comes first, KGCSA shall monitor and limit the discharge from Outfall 001 at the WWTP in accordance with VPDES Permit No. VA0070106, except as specified below. These interim limits shall apply in lieu of the Total Suspended Solids (TSS), Total Kjeldahl Nitrogen (TKN), and Dissolved Oxygen (DO) and Total Recoverable Copper limits in the Permit and shall retroactively apply, if applicable, as of the first day of the month in which this Order becomes effective. These requirements shall be construed in light of the Board's Permit Regulation.

PARAMETER	PARAMETER LIMITATIONS				MONITORING REQUIREMENTS	
	Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Total Suspended Solids, TSS	30 mg/L N/L kg/day	45 mg/L N/L	N/A	N/A	3D/W	8H-C
Total Kjeldahl Nitrogen, TKN	N/L mg/L N/L lb/day	N/L	N/A	N/A	2/M	8H-C
Ammonia as N (Nov – Apr)	5.8 mg/L N/L kg/day	N/L	N/A	N/A	1D/W	8H-C
Ammonia as N (May – Oct)	3.0 mg/L N/L kg/day	N/L	N/A	N/A	1D/W	8H-C
Dissolved Oxygen	N/A	N/A	6.0 mg/L	N/A	1/D	Grab
E. coli (Geometric Mean) ⁽¹⁾	126 n/100 mLs	N/A	N/A	N/A	3D/W	Grab
Total Recoverable Copper	N/L	N/L	N/L	N/L	1/M	Grab

1/D = Once per day

1D/W = One day per week

3D/W = Three days a week

1/M = One day per month

2/M = Twice every month, > 7 days apart

8H-C = A flow proportional composite sample collected automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

(1) Between 10:00 am and 4:00 pm

N/L = No Limit

N/A = Not applicable

APPENDIX C

KGCSA shall at the Oakland Park WWTP:

1. Achieve compliance with permit effluent limitations within 60 days of DEQ issuance of a Certificate to Operate (CTO) for any modification or upgrade of the Oakland Park WWTP or no later than January 15, 2012, whichever occurs first. The modification or upgrade shall be in accordance with the approved Certificate to Construct issued to KGCSA.
2. Submit monthly progress reports to DEQ outlining the projects and steps taken to achieve compliance as outlined in paragraph 1. Said monthly reports shall be due on the 10th of each month and submitted as an attachment with the monthly Discharge Monitoring Report.
3. Operate the WWTP in a manner that produces the best quality effluent of which it is capable in order to minimize impacts to state water during the period of time when it is implementing the corrective action referenced in paragraph one.

APPENDIX D

**INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR
THE OAKLAND WWTP**

During the period beginning with the effective date of this Order and lasting until either 60 days after CTO issuance for any modification and upgrade of the Oakland Park WWTP or by January 15, 2012, whichever comes first, KGCSA shall monitor and limit the discharge from Outfall 001 at the WWTP in accordance with VPDES Permit No. VA0086789, except as specified below. These interim limits shall apply in lieu of the Total Recoverable Copper limits in the Permit and shall retroactively apply, if applicable, as of the first day of the month in which this Order becomes effective. These requirements shall be construed in light of the Board's Permit Regulation.

PARAMETER	PARAMETER LIMITATIONS				MONITORING REQUIREMENTS	
	Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Total Recoverable Copper	N/L	N/L	N/L	N/L	1/M	Grab

1/M = One day per month

N/L = No Limit

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

APPENDIX E

SUPPLEMENTAL ENVIRONMENTAL PROJECT

In accordance with Va. Code § 10.1-1186.2, KGCSA shall perform the Supplemental Environmental Project (SEP) identified below in the manner specified in this Appendix.

1. The SEP to be performed by KGCSA is to disconnect the King George County Parks and Recreation Citizen Center from the existing septic system and connect to the public sanitary sewer system for conveyance to and treatment at the Purkins Corner WWTP
2. The SEP shall be completed according to the following schedule. This schedule may only be altered with DEQ approval:

Task	COMPLETE BY
1. Request Certificate to Construct	August 15, 2011
2. Complete Engineering	August 15, 2011
4. Submit to DEQ and VDOT any required approvals	November 15, 2011
5. Advertise for Construction	December 15, 2011
6. Open Bids; Obtain Board Approval to Execute Contract	January 15, 2011
7. Complete Construction	March 15, 2012
8. Request for Certificate to Operate	April 15, 2012

3. KGCSA shall submit progress reports to DEQ on the SEP on a monthly basis, due the 10th day of each month. If the above schedule cannot be met, KGCSA must thoroughly document in writing to DEQ the reasons for the failure within 10 days of KGCSA discovering that the schedule cannot be met. Any changes in the schedule must be with DEQ approval. If DEQ does not approve the altered schedule, KGCSA must then act in accordance with Item #5 below.
4. KGCSA shall submit a written final report on the SEP, verifying that the SEP has been completed in accordance with the terms of this Order, and certified either by a Certified Public Accountant or by a authorized representative of KGCSA. KGCSA shall submit the final report and certification to the Department within 45 days of completion of the SEP according to the schedule above in Item #2.
5. If the SEP has not or cannot be completed as described in the Order, KGCSA shall notify DEQ in writing no later than 10 days after KGCSA knows that the SEP has not or cannot be completed as described in this Order but no later than March 1, 2012. Such notification shall include:
 - a. an alternate SEP proposal, or
 - b. payment of the amount specified in Section D Paragraph 2.b as described in Section D Paragraph 2.a.
6. KGCSA hereby consents to reasonable access by DEQ or its staff to property or documents under the party's control, for verifying progress or completion of the SEP.

7. KGCSA shall submit to the Department written verification of the final overall and net project cost of the SEP in the form of a certified statement itemizing costs, invoices and proof of payment, or similar documentation within 45 days of the project completion date. For the purposes of this submittal, net project costs can be either the actual, final net project costs or the projected net project costs if such projected net project costs statement is accompanied by a CPA certification or certification from KGCSA's Chief Financial Officer concerning the projected tax savings, grants or first-year operation cost reductions or other efficiencies.
8. Documents to be submitted to the Department, other than the civil charge payment described in Section D of the Order, shall be sent to:

Sarah Baker
Enforcement Manager
DEQ NRO
13901 Crown Court
Woodbridge, Virginia 2219

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Oakland Park WWTP
NPDES Permit Number:	VA0086789
Permit Writer Name:	Joan Crowther
Date:	October 7, 2011

Major []

Minor [X]

Industrial []

Municipal [X]

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit? Consent Order for limit exceedances	X		
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?		X	
8. Does the facility discharge to a 303(d) listed water?		X	
a. Has a TMDL been developed and approved by EPA for the impaired water?		X	
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?			X
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?	X		
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?	X		
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	X		
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

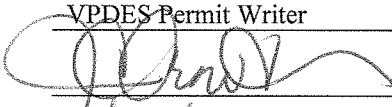
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?	X		

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?			X

II.G. Standard Conditions	Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
List of Standard Conditions – 40 CFR 122.41			
Duty to comply	Property rights	Reporting Requirements	
Duty to reapply	Duty to provide information	Planned change	
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance	
not a defense	Monitoring and records	Transfers	
Duty to mitigate	Signatory requirement	Monitoring reports	
Proper O & M	Bypass	Compliance schedules	
Permit actions	Upset	24-Hour reporting	
		Other non-compliance	
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Joan Crowther</u>
Title	<u>VPDES Permit Writer</u>
Signature	<u></u>
Date	<u>12/12/11</u>